



FLORENCE COPPER INC.
1575 W. Hunt Highway, Florence, Arizona 85132 USA
florencecopper.com

January 28, 2020

U.S. Environmental Protection Agency, Region 9
Drinking Water Protection Section (WTR 3-2)
75 Hawthorne Street
San Francisco, California 94105

Attention: David Albright, Manager, Ground Water Office

Subject: Fourth Quarter 2019 Monitoring Report
Underground Injection Control (UIC) Permit Number R9UIC-AZ3-FY11-1

Dear Mr. Albright:

Florence Copper Inc. is regulated under UIC Permit No. R9UIC-AZ3-FY11-1, issued December 20, 2016, for a Production Test Facility (PTF). The facility began active operations on December 15, 2018. This report outlines the reporting requirements in accordance with Part II.G.2 of that Permit.

Background Information

The Florence Copper Project is an in-situ copper extraction facility subject to three related permits issued by the U.S. Environmental Protection Agency (USEPA) and the Arizona Department of Environmental Quality (ADEQ).

Aquifer Protection Permit Covering the 1997-98 BHP Pilot Facilities and Future Operations (Sitewide APP):

- ADEQ APP No. P-101704 (LTF 65804) dated October 13, 2017.

Under the Sitewide APP, a test wellfield, a small leachate processing facility, and a double-lined evaporation pond were constructed. The Pilot Test Facility operated from October 31, 1997 to February 9, 1998. The test wellfield was rinsed until September 1, 2004. Cessation of hydraulic control for testing was approved by both agencies and the wellfield has since remained inactive. Subsequently, no Sitewide permit-related activities have taken place. The authorized facilities and monitoring wells are identified on Figure 1.

Permits Covering the Current Production Test Facility:

- ADEQ Temporary APP No. P-106360 (LTF 78815) dated November 26, 2019; and
- USEPA UIC Permit No. R9UIC-AZ3-FY11-1 dated December 20, 2016.

These permits authorize operation of the PTF and set forth separate monitoring requirements to be applied at the PTF, which lies within the area covered by the Sitewide APP. The Temporary APP and UIC facilities and monitoring wells are identified on Figure 1. The PTF wellfield is shown on Figure 2. The facility received authorization to proceed with pre-operational activities on July 13, 2017, and the PTF wellfield was completed and began operations on December 15, 2018.

This report documents monitoring activities required by the UIC permit. Reporting for the Sitewide and Temporary APP permits is performed separately; however, some information pertains to multiple permits and is reported accordingly.

PTF Operations Quarterly Reporting

- **Part II.G.2.a – Map of Operational Status and Groundwater Contours**

The monthly groundwater contour maps are included as Attachment 1. The operational status of the PTF facility was ACTIVE during Q4 2019.

- **Part II.G.2.b – Table and Graphs of Injected and Recovered Volumes**

The daily cumulative injection and recovery volumes, and the daily percent recovery to injection volume values, are provided in tabular and graphical format in Attachment 2. Throughout Q4 2019, the extracted volume has consistently exceeded the injected volume.

- **Part II.G.2.c – Table and Graphs of the Well Head Measurements in the PTF**

The daily average head measurement values for the observation wells and recovery wells are provided in tabular and graphical format in Attachment 3. The hydraulic gradient has been maintained with a greater than 1-foot differential as a daily average throughout Q4 2019.

- **Part II.G.2.d – Table and Graphs of Fluid Electrical Conductivity Measurements**

Fluid electrical conductivity values are provided in tabular and graphical format in Attachment 4. There were no instances where observation well measurements were greater than injection well readings during Q4 2019.

- **Part II.G.2.e – Table and Graphs of Bulk Electrical Conductivity Measurements**

Bulk electrical conductivity values are provided in tabular and graphical format in Attachment 5. Bulk electrical conductivity Alert Levels (AL) were exceeded in Q4 2019 for the following sensor pairs:

- Horizon 1, between wells O-05 and O-06;
- Horizon 1, between wells O-06 and O-07;
- Horizon 2, between wells O-05 to O-06;
- Horizon 3, between wells O-05 to O-06; and
- Horizon 3, between wells O-05 to O-07.

Refer to Attachment 5 for details.

- **Part II.G.2.f – Table and Graphs of Monitor Well Water Levels and Analytical Results**

The Q4 2019 Compliance Monitoring Report is provided in Attachment 6 and presents the tabular results of groundwater elevations, analytical results, field parameters, and ALs and Aquifer Quality Limits (AQL) for wells regulated under the UIC permit and Temporary APP. The Compliance Monitoring Report also provides a narrative summary of the Q4 2019 monitoring activities, a discussion of exceedances, and graphical presentation of monitoring results for a select set of parameters since the inception of monitoring.

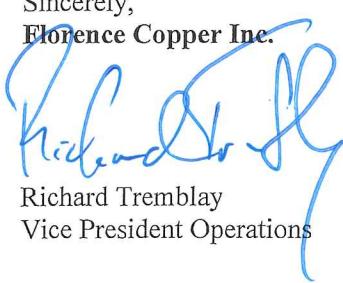
- **Part II.G.2.g – Results of Monthly Lixiviant Organic Analysis**

The analytical results for monthly lixiviant organic analysis are provided in tabular format in Attachment 7. The monthly organic concentrations were below the AL throughout Q4 2019.

- **Part II.G.2.h – Results of Monitoring Required If Injection Fluid is Modified**
No modifications were made to the injection fluid composition during Q4 2019.
- **Part II.G.2.i – Results of Mechanical Integrity Testing**
Mechanical integrity tests were conducted at injection wells I-01, I-02, I-03, and I-04 during Q4 2019. A summary of results is provided in Attachment 8. Each of the four injection wells passed mechanical integrity testing by means of a Standard Annular Pressure Test. A summary report of the mechanical integrity testing of the wells will be provided to the USEPA under separate cover.
- **Part II.G.2.j – Results of Annular Conductivity Device (ACD) Monitoring**
The results of the Q4 2019 well bore annual electrical conductivity monitoring are provided in Attachment 9. Annular electrical conductivity readings have remained approximately constant or increased slightly in 8 of the 11 wells since monitoring began in Q3 2018. Annual electrical conductivity has decreased in wells O-04, O-06, and WB-01 during that same time. The results of the monitoring indicate the absence of injected fluid at the ACD locations.
- **Part II.G.2.k – Summary of Plugging and Abandonment Activity**
No plugging or abandonment activity was performed during Q4 2019.
- **Part II.G.2.l – Summary of Closure Operations**
No closure operations were conducted during Q4 2019.
- **Part II.G.2.m – Table of Monthly Casing Annulus and Injection Pressures**
Monthly maximum, minimum, and average injection pressures are provided in Attachment 10. There were no exceedances of the injection pressure limit during Q4 2019.
- **Appendix H – Migratory Bird Landings and Mortality**
Daily inspection of the Process Solution Impoundment was conducted to record any migratory bird landings and/or identify any migratory bird mortality. Three landing events were observed during Q4 2019 and are summarized in Attachment 11. No bird mortalities were observed in Q4 2019.

Please contact me at (520) 374-3984 Ext. 3710 with any questions regarding the content of this document.

Sincerely,
Florence Copper Inc.



Richard Tremblay
Vice President Operations

Enclosures:

Figure 1 – Groundwater Monitoring Area

Figure 2 – PTF Wellfield

Attachment 1 – Map of Operational Status and Groundwater Contours

Attachment 2 – Table and Graphs of Injected and Recovered Volumes

Attachment 3 – Table and Graphs of the Well Head Measurements in the Production Test Facility

Attachment 4 – Table and Graphs of Fluid Electrical Conductivity Measurements

Attachment 5 – Table and Graphs of Bulk Electrical Conductivity Measurements

Attachment 6 – Table and Graphs of Monitor Well Water Levels and Analytical Results

Attachment 7 – Results of Monthly Lixiviant Organic Analysis

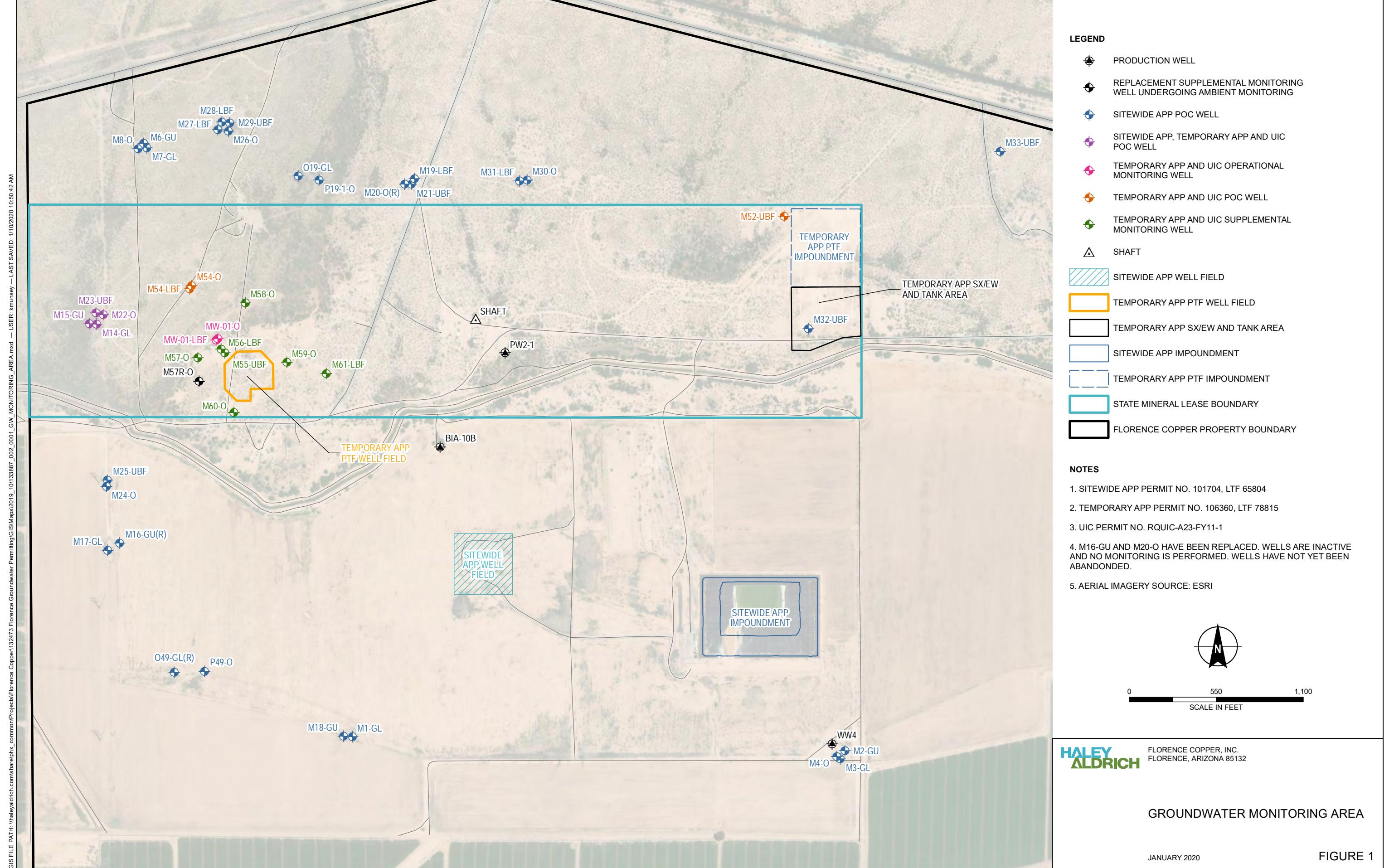
Attachment 8 – Results of Mechanical Integrity Testing

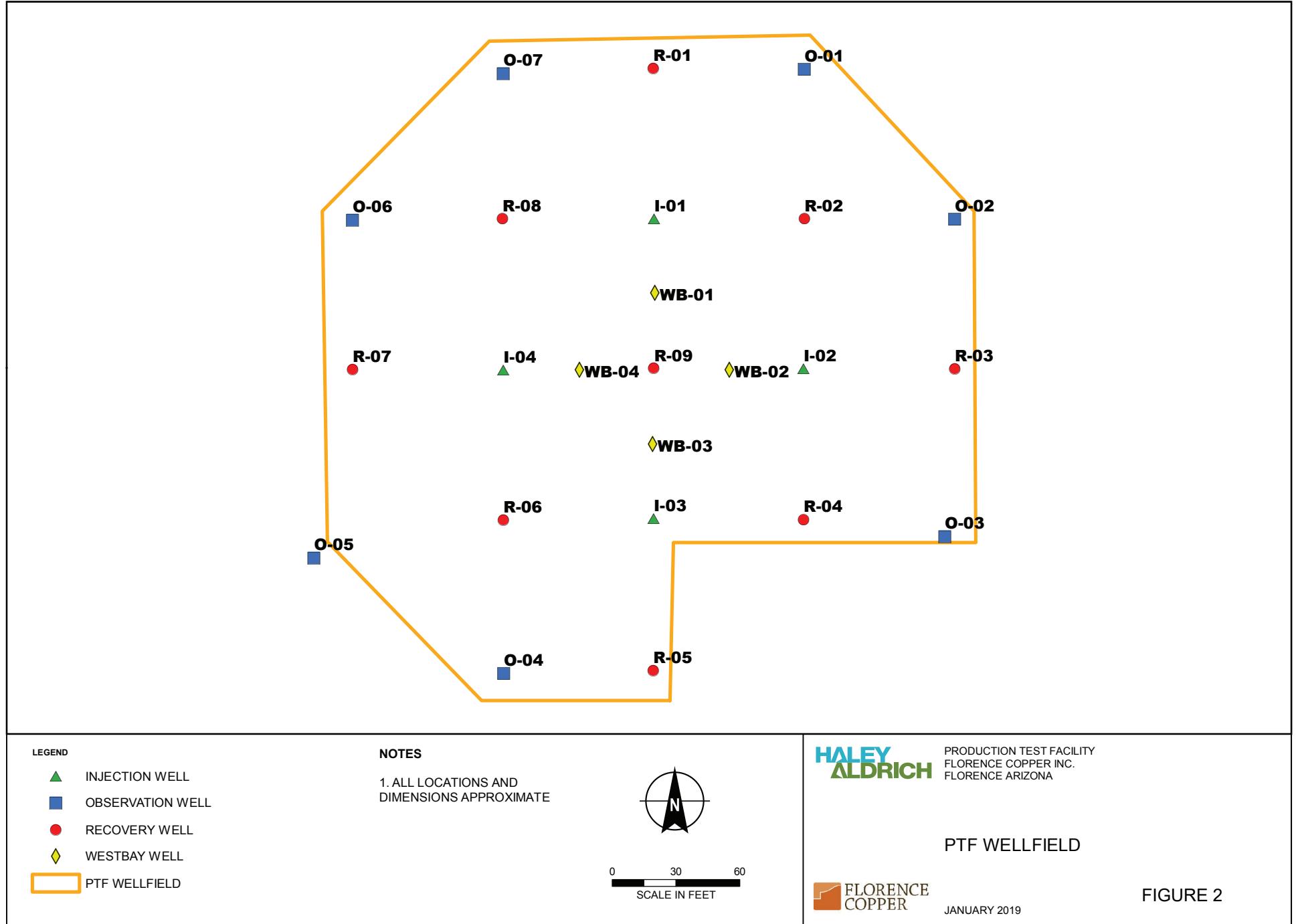
Attachment 9 – Results of Annular Conductivity Device Monitoring

Attachment 10 – Table of Monthly Casing Annulus and Injection Pressures

Attachment 11 – Migratory Bird Landings

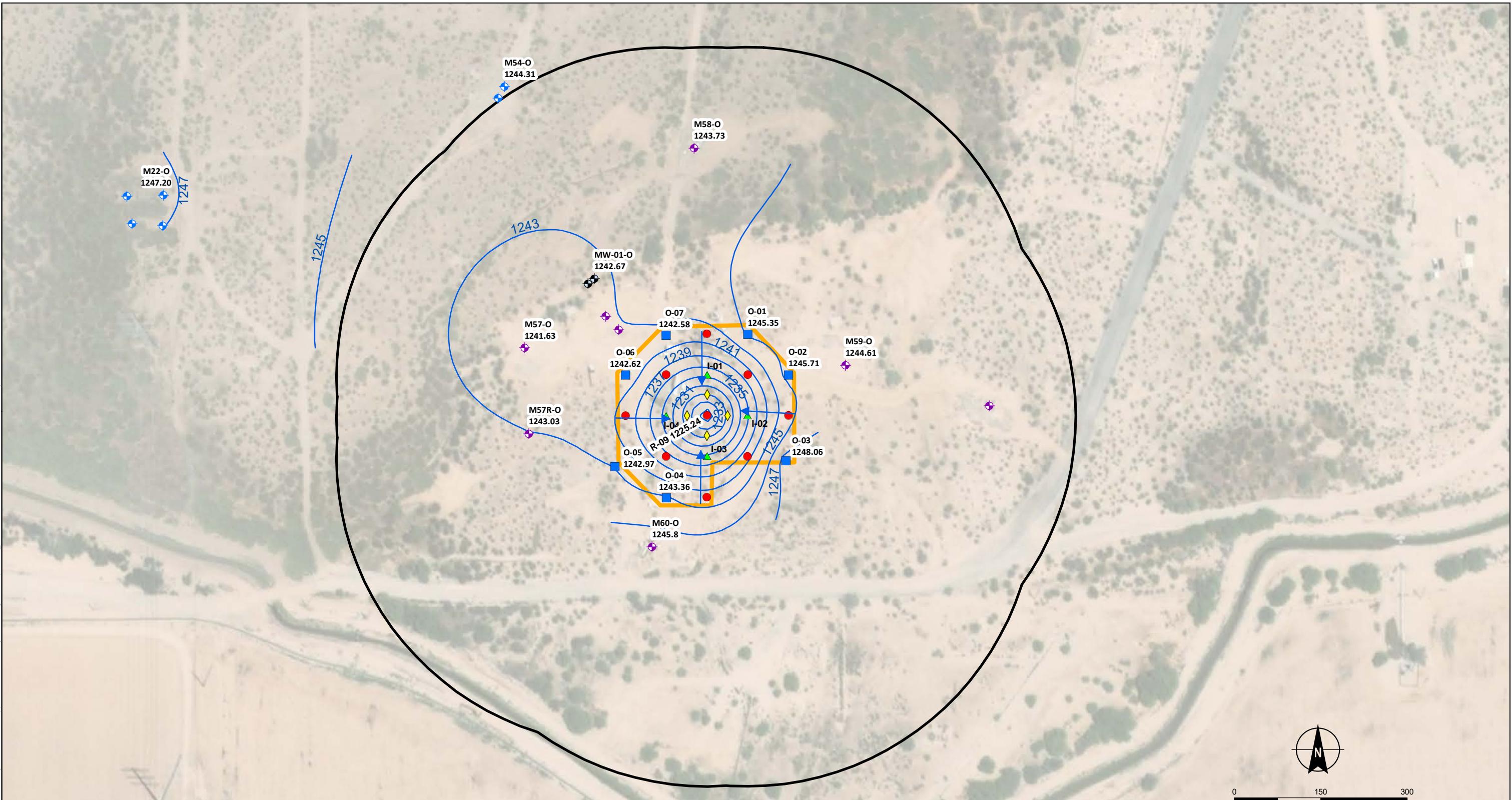
FIGURES





ATTACHMENT 1

Map of Operational Status and Groundwater Contours



█ OBSERVATION WELL
▲ INJECTION WELL
● RECOVERY WELL
◆ WESTBAY WELL
◆ POC WELL
◆ SUPPLEMENTAL MONITORING WELL
◆ OPERATIONAL MONITORING WELL

— INFERRED CONTOURS
— OCTOBER 2019 GROUNDWATER ELEVATION CONTOURS
— POLLUTANT MANAGEMENT
— PTF WELLFIELD

WELL ID: M59-O
 GROUNDWATER ELEVATION: 1244.91

NOTES

1. ALL LOCATIONS AND DIMENSIONS APPROXIMATE
2. GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
3. CONTOUR INTERVAL = 2FT
4. WATER LEVEL DATA FROM WELLS COLLECTED 10/09/2019
5. ONLY WELLS COMPLETED IN THE BEDROCK OXIDE THAT HAVE CONTOUR ELEVATIONS LABELED WERE USED IN CONTOURING GROUNDWATER ELEVATIONS

HALEY ALDRICH

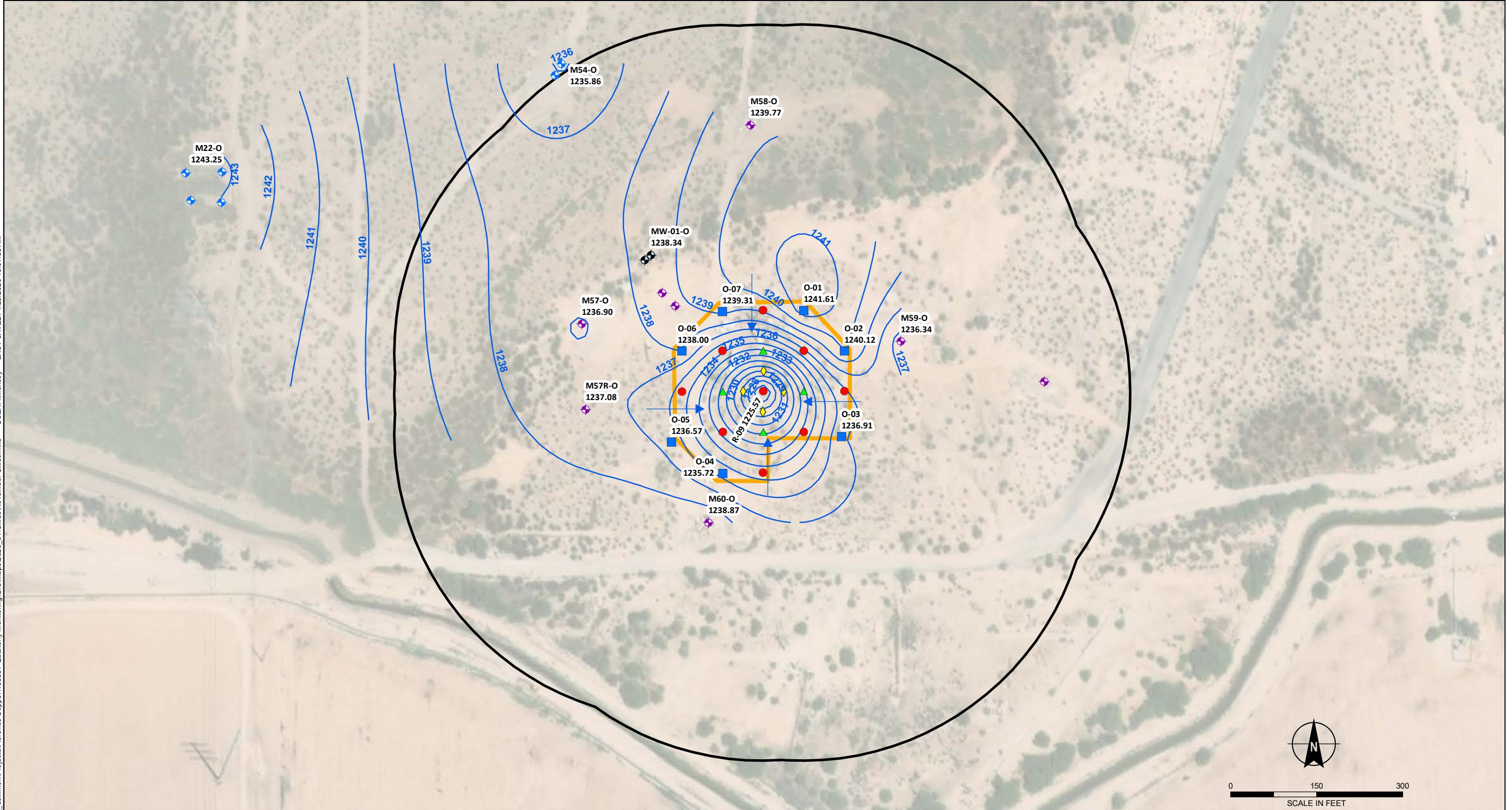
PRODUCTION TEST FACILITY
FLORENCE COPPER, INC.
FLORENCE, ARIZONA

OXIDE GROUNDWATER
ELEVATION CONTOURS
OCTOBER 2019

FLORENCE COPPER

JANUARY 2020

FIGURE 1



■ OBSERVATION WELL
▲ INJECTION WELL
● RECOVERY WELL
◆ WESTBAY WELL
◆ POC WELL
◆ SUPPLEMENTAL MONITORING WELL
◆ OPERATIONAL MONITORING WELL

— INFERRED CONTOURS
— NOVEMBER 2019 GROUNDWATER ELEVATION CONTOURS
— POLLUTANT MANAGEMENT AREA
— PTF WELLFIELD

WELL ID: M59-O
 GROUNDWATER ELEVATION: 1236.34

NOTES

1. ALL LOCATIONS AND DIMENSIONS APPROXIMATE
2. GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
3. CONTOUR INTERVAL = 1FT
4. WATER LEVEL DATA FROM WELLS COLLECTED 11/06/2019
5. ONLY WELLS COMPLETED IN THE BEDROCK OXIDE THAT HAVE CONTOUR ELEVATIONS LABELED WERE USED IN CONTOURING GROUNDWATER ELEVATIONS

HALEY ALDRICH

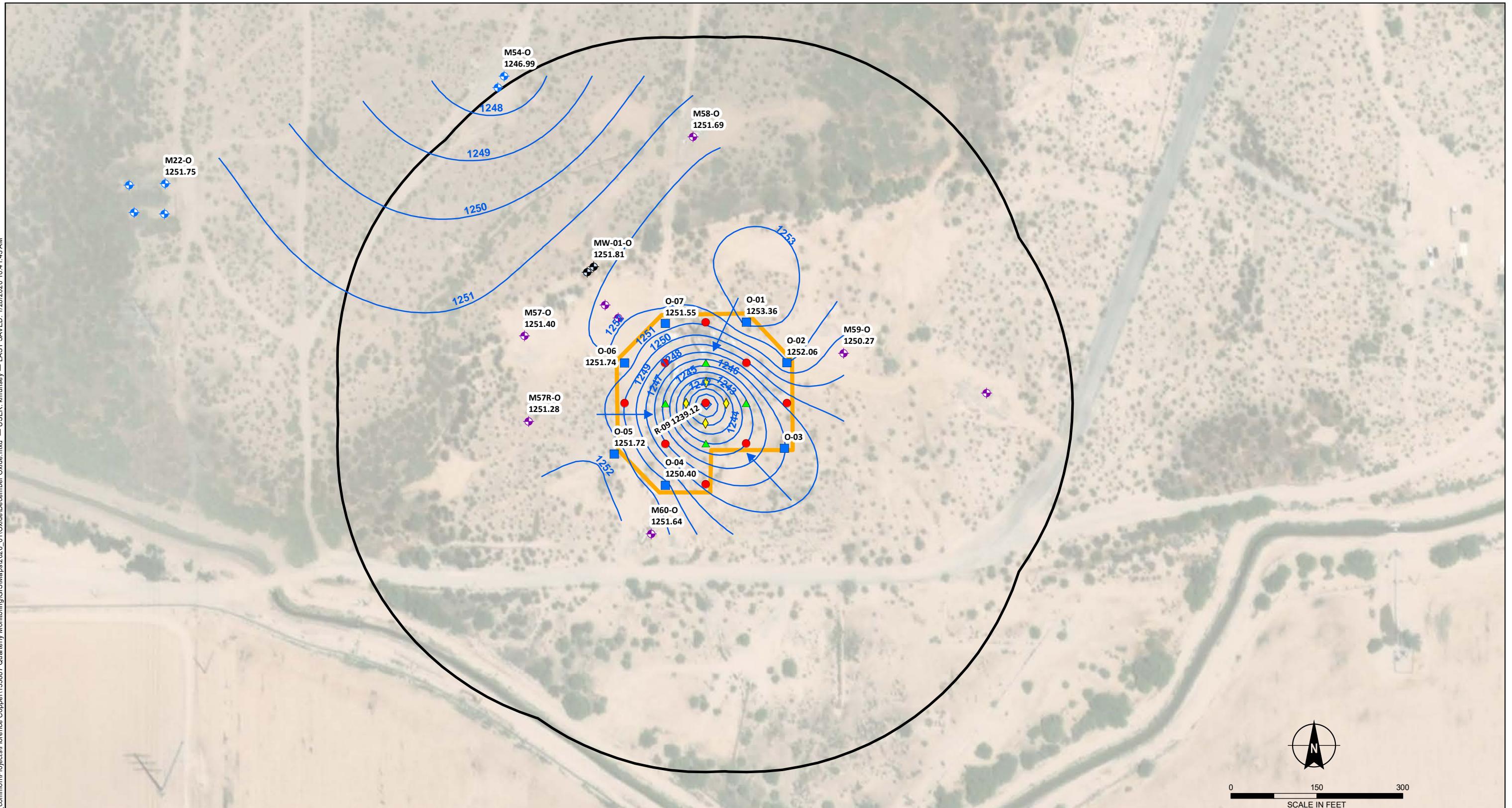
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OXIDE GROUNDWATER ELEVATION CONTOUR
NOVEMBER 2019

FLORENCE COPPER

JANUARY 2020

FIGURE 2



█ OBSERVATION WELL
▲ INJECTION WELL
● RECOVERY WELL
◆ WESTBAY WELL
◆ POC WELL
◆ SUPPLEMENTAL MONITORING WELL
◆ OPERATIONAL MONITORING WELL

— INFERRED CONTOURS
— DECEMBER 2019 GROUNDWATER ELEVATION CONTOURS
— POLLUTANT MANAGEMENT
— PTF WELLFIELD

WELL ID: M59-O
 GROUNDWATER ELEVATION: 1244.91

NOTES

1. ALL LOCATIONS AND DIMENSIONS APPROXIMATE
2. GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
3. CONTOUR INTERVAL = 1FT
4. WATER LEVEL DATA FROM WELLS COLLECTED 12/19/2019
5. ONLY WELLS COMPLETED IN THE BEDROCK OXIDE THAT HAVE CONTOUR ELEVATIONS LABELED WERE USED IN CONTOURING GROUNDWATER ELEVATIONS
6. O-03 WATER LEVEL NOT AVAILABLE DUE TO BLADDER PUMP/TUBING RETRIEVAL AND REDEVELOPMENT

HALEY ALDRICH

PRODUCTION TEST FACILITY
FLORENCE COPPER, INC.
FLORENCE, ARIZONA

OXIDE GROUNDWATER
ELEVATION CONTOUR
DECEMBER 2019

FLORENCE COPPER

JANUARY 2020

FIGURE 3

ATTACHMENT 2

Table and Graphs of Injected and Recovered Volumes

Table 1. October 2019 Daily Injection and Recovery Volumes

Date	Daily Injection Volume (gallons)	Daily Recovery Volume (gallons)	Ratio PLS/Raff	% Recovery
10/1/2019	360,000	403,200	1.12	112
10/2/2019	358,900	404,400	1.11	111
10/3/2019	359,000	405,800	1.11	111
10/4/2019	359,000	403,400	1.12	112
10/5/2019	359,000	406,200	1.12	112
10/6/2019	351,000	405,600	1.11	111
10/7/2019	347,200	388,200	1.12	112
10/8/2019	347,400	386,300	1.12	112
10/9/2019	347,400	383,800	1.11	111
10/10/2019	331,000	383,200	1.15	115
10/11/2019	319,900	394,700	1.11	111
10/12/2019	321,000	404,300	1.11	111
10/13/2019	320,900	405,600	1.11	111
10/14/2019	320,900	397,900	1.12	112
10/15/2019	321,000	397,900	1.11	111
10/16/2019	321,500	396,800	1.11	111
10/17/2019	321,800	398,200	1.11	111
10/18/2019	321,500	398,700	1.11	111
10/19/2019	324,100	398,500	1.12	112
10/20/2019	318,800	396,200	1.12	112
10/21/2019	318,100	397,400	1.11	111
10/22/2019	319,700	396,900	1.11	111
10/23/2019	320,000	397,900	1.13	113
10/24/2019	319,500	396,400	1.12	112
10/25/2019	321,500	388,800	1.12	112
10/26/2019	319,600	398,200	1.14	114
10/27/2019	321,200	383,100	1.13	113
10/28/2019	321,200	363,000	1.10	110
10/29/2019	320,900	388,200	1.11	111
10/30/2019	321,200	398,600	1.12	112
10/31/2019	317,300	382,200	1.20	120
OCT Averages	330,694	395,148	1.12	112

OCT Averages	Monthly Average Injection Volume (GPM)	Monthly Average Recovery Volume (GPM)
	230	274

Notes:*% = percent**GPM = gallons per minute**PLS = pregnant leach solution**Raff = Raffinate*

Table 2. November 2019 Daily Injection and Recovery Volumes

Date	Daily Injection Volume (gallons)	Daily Recovery Volume (gallons)	Ratio PLS/Raff	% Recovery
11/1/2019	285,800	345,000	1.11	111
11/2/2019	318,700	382,700	1.10	110
11/3/2019	320,700	384,600	1.11	111
11/4/2019	319,500	386,000	1.21	121
11/5/2019	296,300	360,500	1.22	122
11/6/2019	318,900	386,100	1.21	121
11/7/2019	318,900	388,700	1.22	122
11/8/2019	316,600	386,400	1.22	122
11/9/2019	315,900	381,000	1.21	121
11/10/2019	315,800	384,200	1.22	122
11/11/2019	315,900	388,000	1.23	123
11/12/2019	312,400	385,200	1.23	123
11/13/2019	310,300	385,400	1.24	124
11/14/2019	338,200	387,600	1.15	115
11/15/2019	333,600	388,400	1.16	116
11/16/2019	338,800	387,700	1.14	114
11/17/2019	338,800	387,600	1.14	114
11/18/2019	338,700	388,200	1.15	115
11/19/2019	338,900	387,700	1.14	114
11/20/2019	338,700	387,600	1.14	114
11/21/2019	337,400	387,800	1.15	115
11/22/2019	336,300	388,400	1.15	115
11/23/2019	341,700	387,400	1.13	113
11/24/2019	342,200	387,300	1.13	113
11/25/2019	341,700	384,900	1.13	113
11/26/2019	336,400	380,900	1.13	113
11/27/2019	342,500	384,000	1.12	112
11/28/2019	336,100	381,700	1.14	114
11/29/2019	345,600	388,000	1.12	112
11/30/2019	345,900	387,800	1.12	112
NOV Averages	327,907	383,893	1.16	116

NOV Averages	Monthly Average Injection Volume (GPM)	Monthly Average Recovery Volume (GPM)
	228	267

Notes:

% = percent

GPM = gallons per minute

PLS = pregnant leach solution

Raff = Raffinate

VOLUMES WITH PERCENT RECOVERY

FLORENCE COPPER INC.

FLORENCE, ARIZONA

Table 3. December 2019 Daily Injection and Recovery Volumes

Date	Daily Injection Volume (gallons)	Daily Recovery Volume (gallons)	Ratio PLS/Raff	% Recovery
12/1/2019	346,100	387,700	1.12	112
12/2/2019	345,500	388,300	1.12	112
12/3/2019	345,800	387,200	1.12	112
12/4/2019	331,700	367,200	1.11	111
12/5/2019	324,900	359,100	1.11	111
12/6/2019	309,500	341,800	1.10	110
12/7/2019	297,100	330,200	1.11	111
12/8/2019	297,000	330,100	1.11	111
12/9/2019	296,400	329,000	1.11	111
12/10/2019	231,700	256,200	1.11	111
12/11/2019	216,300	240,000	1.11	111
12/12/2019	216,200	239,400	1.11	111
12/13/2019	216,400	241,900	1.12	112
12/14/2019	214,600	242,200	1.13	113
12/15/2019	216,100	243,600	1.13	113
12/16/2019	216,200	243,200	1.12	112
12/17/2019	216,100	239,900	1.11	111
12/18/2019	216,300	240,900	1.11	111
12/19/2019	216,400	239,400	1.11	111
12/20/2019	216,200	240,200	1.11	111
12/21/2019	216,200	239,400	1.11	111
12/22/2019	216,700	239,300	1.10	110
12/23/2019	216,300	241,700	1.12	112
12/24/2019	219,900	247,300	1.12	112
12/25/2019	219,900	251,400	1.14	114
12/26/2019	224,160	255,800	1.14	114
12/27/2019	232,272	260,900	1.12	112
12/28/2019	232,272	260,400	1.12	112
12/29/2019	231,264	259,000	1.12	112
12/30/2019	215,500	240,500	1.12	112
12/31/2019	216,300	240,200	1.11	111
DEC Averages	249,267	278,174	1.12	112

DEC Averages	Monthly Average Injection Volume (GPM)	Monthly Average Recovery Volume (GPM)
	173	193

Notes:

% = percent

GPM = gallons per minute

PLS = pregnant leach solution

Raff = Raffinate

Figure 1. Injection vs. Recovery Volumes - October

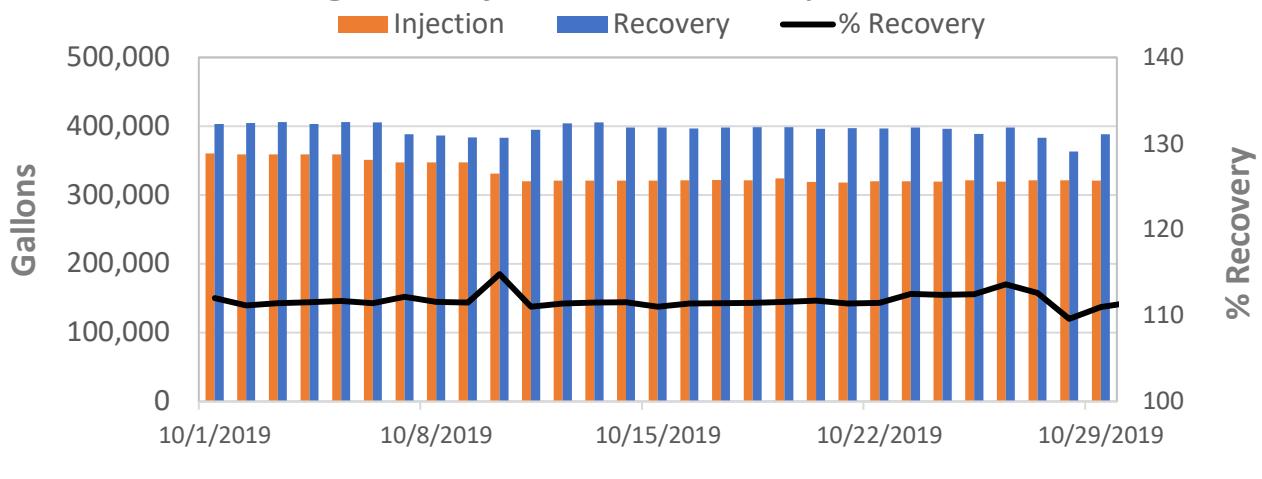


Figure 2. Injection vs. Recovery Volumes - November

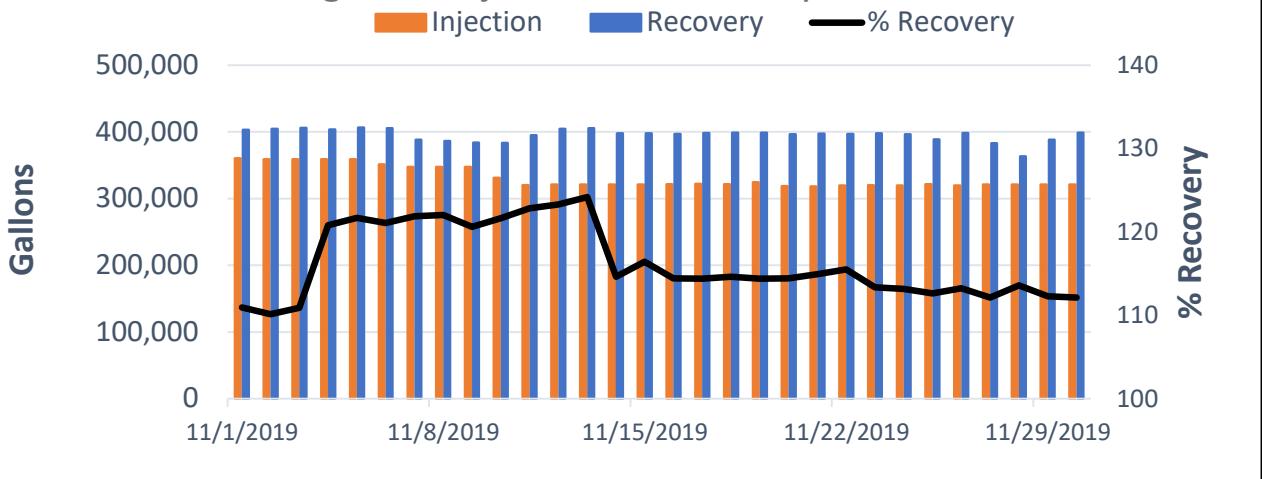
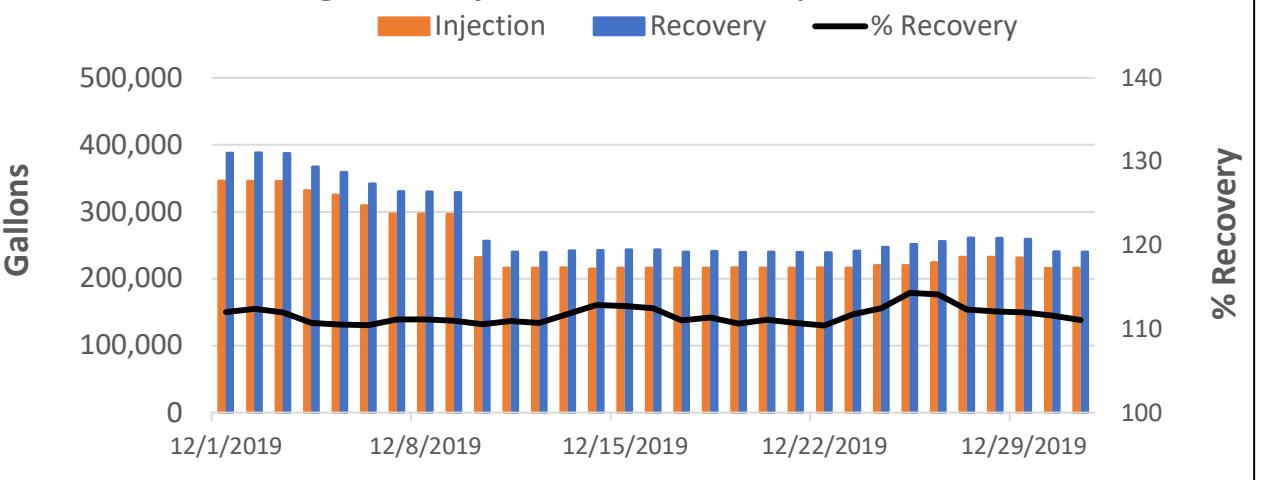


Figure 3. Injection vs. Recovery Volumes - December



ATTACHMENT 3

Table and Graphs of the Well Head Measurements in the Production Test Facility

**Q4 2019 HYDRAULIC GRADIENT, DAILY AVERAGE WATER LEVEL ELEVATIONS,
OBSERVATION AND RECOVERY WELLS**

FLORENCE COPPER INC.
FLORENCE, ARIZONA

Page 1 of 3

Table 1. October 2019 Daily Average Water Level Elevations

Date	R-01	O-01	O-07	R-02	O-01	O-02	R-03	O-02	O-03	R-04	O-03	R-05	O-04	R-06	O-04	O-05	R-07	O-05	O-06	R-08	O-06	O-07	R-09
10/1/2019	1231.25	1244.63	1243.95	1220.77	1244.63	1245.40	1210.75	1245.40	1249.93	1194.09	1249.93	1219.60	1245.36	1205.12	1245.36	1244.45	1241.49	1244.45	1243.20	1215.55	1243.20	1243.95	1225.99
10/2/2019	1229.88	1244.63	1243.95	1218.71	1243.08	1243.83	1208.78	1243.83	1248.75	1191.89	1248.75	1217.42	1244.61	1208.67	1244.61	1243.44	1240.47	1243.44	1241.90	1214.37	1241.90	1240.36	1225.18
10/3/2019	1230.01	1243.08	1240.36	1219.40	1243.06	1243.86	1206.25	1243.86	1248.75	1190.93	1248.75	1218.73	1244.67	1206.68	1244.67	1240.49	1243.46	1241.90	1214.38	1241.90	1240.71	1225.54	
10/4/2019	1230.62	1243.85	1241.78	1221.98	1243.85	1244.72	1206.80	1244.72	1249.66	1194.03	1249.66	1219.78	1245.26	1207.52	1245.26	1244.09	1241.20	1244.09	1242.59	1214.59	1242.59	1241.78	1227.34
10/5/2019	1229.07	1242.45	1240.15	1218.44	1242.45	1243.21	1204.29	1243.21	1248.05	1189.09	1248.05	1217.69	1244.07	1205.60	1244.07	1243.02	1239.88	1243.02	1241.51	1213.26	1241.51	1240.15	1223.30
10/6/2019	1228.94	1241.57	1239.06	1219.30	1241.57	1242.46	1211.19	1242.46	1246.96	1188.70	1246.96	1211.31	1242.41	1195.27	1242.41	1241.38	1238.44	1241.38	1240.04	1211.93	1240.04	1239.06	1219.89
10/7/2019	1231.42	1243.11	1241.26	1224.27	1243.11	1243.74	1211.48	1243.74	1247.51	1188.66	1247.51	1210.50	1242.95	1191.88	1242.95	1242.26	1240.00	1242.26	1241.29	1216.09	1241.29	1241.26	1221.96
10/8/2019	1232.53	1244.73	1241.64	1225.92	1244.73	1245.06	1212.07	1245.06	1247.73	1188.66	1247.73	1210.01	1243.32	1193.67	1243.32	1242.83	1240.14	1242.83	1242.28	1217.00	1242.28	1241.64	1225.71
10/9/2019	1232.19	1245.35	1242.58	1226.44	1245.35	1245.71	1204.48	1245.71	1248.06	1188.70	1248.06	1209.43	1243.36	1189.15	1243.36	1242.97	1240.67	1242.97	1242.62	1217.07	1242.62	1242.58	1225.24
10/10/2019	1229.78	1244.07	1237.78	1229.17	1244.07	1244.62	1203.61	1244.62	1245.74	1191.34	1245.74	1185.51	1239.36	1185.89	1239.36	1239.54	1237.78	1239.54	1240.00	1214.71	1240.00	1237.78	1228.58
10/11/2019	1225.79	1240.13	1236.42	1227.26	1240.13	1240.50	1207.49	1240.50	1240.47	1189.33	1240.47	1180.41	1234.58	1181.52	1234.58	1235.12	1233.24	1235.12	1235.98	1210.69	1235.98	1236.42	1226.61
10/12/2019	1222.81	1237.04	1233.64	1222.91	1237.04	1237.32	1207.81	1237.32	1237.64	1184.28	1237.64	1180.41	1231.96	1181.52	1231.96	1232.36	1230.65	1232.36	1233.13	1207.33	1233.13	1233.64	1222.94
10/13/2019	1221.66	1236.19	1233.42	1221.61	1236.19	1236.44	1207.15	1236.44	1236.89	1184.44	1236.89	1180.41	1231.17	1180.52	1231.17	1231.53	1229.80	1231.53	1232.29	1206.50	1232.29	1233.42	1221.86
10/14/2019	1222.74	1237.62	1234.48	1222.59	1237.62	1237.44	1208.26	1237.44	1236.91	1184.29	1236.91	1181.32	1232.51	1181.52	1232.51	1232.99	1231.37	1232.99	1233.78	1207.97	1233.78	1234.48	1221.67
10/15/2019	1224.36	1239.26	1235.83	1224.41	1239.26	1238.91	1208.35	1238.91	1238.32	1185.33	1238.32	1182.08	1234.08	1181.52	1234.08	1234.54	1233.05	1234.54	1235.37	1209.52	1235.37	1235.83	1223.37
10/16/2019	1224.26	1239.31	1236.88	1224.97	1239.31	1238.99	1208.35	1238.99	1238.45	1185.33	1238.45	1181.63	1234.03	1181.52	1234.03	1234.43	1232.84	1234.43	1235.29	1209.38	1235.29	1236.88	1223.25
10/17/2019	1223.11	1238.23	1236.04	1222.98	1238.23	1237.83	1207.39	1237.83	1237.12	1184.32	1237.12	1180.88	1232.90	1181.52	1232.90	1233.36	1231.79	1233.36	1234.25	1208.40	1234.25	1236.04	1221.59
10/18/2019	1223.09	1238.35	1236.17	1222.50	1238.35	1237.86	1208.16	1237.86	1237.18	1184.35	1237.18	1180.14	1233.08	1181.52	1233.08	1233.53	1231.59	1233.53	1234.36	1208.19	1234.36	1236.17	1221.04
10/19/2019	1223.41	1238.72	1236.57	1222.70	1238.72	1238.25	1207.23	1238.25	1237.47	1184.26	1237.47	1180.28	1233.69	1181.52	1233.69	1234.01	1232.28	1234.01	1234.80	1208.48	1234.80	1236.57	1221.51
10/20/2019	1223.74	1239.04	1236.93	1222.94	1239.04	1238.61	1202.24	1238.61	1237.97	1184.32	1237.97	1180.59	1234.13	1181.52	1234.13	1234.46	1232.68	1234.46	1235.21	1208.78	1235.21	1236.93	1221.65
10/21/2019	1224.04	1239.39	1237.23	1223.23	1239.39	1238.82	1201.99	1238.82	1238.28	1184.27	1238.28	1181.23	1234.47	1181.03	1234.47	1234.79	1233.02	1234.79	1235.52	1209.67	1235.52	1237.23	1222.22
10/22/2019	1224.06	1239.12	1236.86	1222.63	1239.12	1238.62	1197.59	1238.62	1237.85	1184.12	1237.85	1181.68	1233.96	1180.53	1233.96	1234.33	1232.59	1234.33	1235.14	1209.34	1235.14	1236.86	1222.86
10/23/2019	1222.53	1237.71	1235.39	1220.76	1237.71	1237.17	1203.54	1237.17	1236.23	1184.28	1236.23	1180.19	1232.36	1180.53	1232.36	1232.77	1231.13	1232.77	1233.66	1207.89	1233.66	1235.39	1220.45
10/24/2019	1222.81	1238.11	1235.73	1222.14	1238.11	1237.46	1199.61	1237.46	1236.48	1184.39	1236.48	1180.19	1232.49	1180.53	1232.49	1233.09	1231.37	1233.09	1234.07	1208.86	1234.07	1235.73	1221.14
10/25/2019	1221.46	1236.89	1234.43	1219.59	1236.89	1236.40	1199.23	1236.40	1235.41	1184.37	1235.41	1179.42	1231.35	1180.53	1231.35	1231.71	1230.03	1231.71	1232.62	1206.11	1232.62	1234.43	1219.94
10/26/2019	1222.14	1237.79	1235.50	1220.35	1237.79	1237.09	1208.35	1237.09	1236.02	1184.31	1236.02	1179.42	1232.35	1180.53	1232.35	1231.18	1229.43	1231.18	1232.04	1207.45	1232.04	1235.50	1221.05
10/27/2019	1226.11	1242.08	1239.85	1224.44	1242.08	1241.30	1207.82	1241.30	1240.04	1184.65	1240.04	1179.42	1236.69	1180.53	1236.69	1237.86	NA	1237.86	1238.79	1211.07	1238.79	1239.85	1229.04
10/28/2019	1225.47	1241.47	1238.94	1223.72	1241.47	1240.78	1208.30	1240.78	1239.67	1184.75	1239.67	1179.93	1235.95	1180.53	1235.95	1236.55	1233.40	1236.55	1237.37	1210.02	1237.37	1238.94	1229.47
10/29/2019	1224.25	1240.06	1237.60	1220.88	1240.06	1239.40	1207.94	1239.40	1238.60	1186.65	1238.60	1179.42	1234.73	1180.53	1234.73	1235.07	1233.01	1235.07	1235.83	1210.27	1235.83	1237.60	1228.07
10/30/2019	1227.37	1241.21	1238.80	1223.05	1241.21	1240.50	1197.00	1240.50	1239.29	1184.25	1239.29	1179.42	1235.88	1180.53	1235.88	1236.32	1234.83	1236.32	1237.10	1209.23	1237.10	1238.80	1229.03
10/31/2019	1228.66	1241.86	1239.45	1223.41	1241.86	1241.03	1199.65	1241.03	1239.18	1184.14	1239.18	1179.42	1236.00	1180.53	1236.00	1236.63	1235.35	1236.63	1237.84	1220.64	1237.84	1239.45	1229.21

All measurements in elevation above mean sea level.

NA or NM = Not measured or otherwise not available

No data were available for the following dates/wells:

10/27/2019 R-07 pump replacement.

**Q4 2019 HYDRAULIC GRADIENT, DAILY AVERAGE WATER LEVEL ELEVATIONS,
OBSERVATION AND RECOVERY WELLS**

FLORENCE COPPER INC.

FLORENCE, ARIZONA

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Table 2. November 2019 Daily Average Water Level Elevations

Date	R-01	O-01	O-07	R-02	O-01	O-02	R-03	O-02	O-03	R-04	O-03	R-05	O-04	R-06	O-04	O-05	R-07	O-05	O-06	R-08	O-06	O-07	R-09	
11/1/2019	1231.05	1241.64	1240.36	1222.21	1241.64	1240.21	1198.85	1240.21	1237.43	1184.10	1237.43	1179.80	1237.49	1180.53	1237.49	1238.24	1236.77	1238.24	1239.22	1226.99	1239.22	1240.36	1228.61639	
11/2/2019	1229.34	1242.40	1240.04	1223.00	1242.40	1241.53	1200.99	1241.53	1239.47	1185.00	1239.47	1179.46	1236.42	1180.53	1236.42	1237.13	1235.77	1237.13	1238.47	1224.13	1238.47	1240.04	1228.74888	
11/3/2019	1229.40	1242.58	1240.05	1224.16	1242.58	1241.67	1199.47	1241.67	1239.44	1183.64	1239.44	1180.34	1236.18	1180.53	1236.18	1236.97	1235.66	1236.97	1238.44	1224.96	1238.44	1240.05	1228.67726	
11/4/2019	1228.95	1242.02	1239.66	1222.95	1242.02	1241.14	1199.27	1241.14	1239.00	1183.94	1239.00	1180.99	1235.91	1180.53	1235.91	1236.64	1235.32	1236.64	1238.10	1224.85	1238.10	1239.66	1227.07884	
11/5/2019	1229.45	1240.68	1235.62	1220.77	1240.68	1239.78	1199.40	1239.78	1238.08	1184.73	1238.08	1180.18	1236.41	1180.53	1236.41	1237.05	1235.62	1237.05	1238.16	1226.99	1238.16	1235.62	1228.02995	
11/6/2019	1232.24	1241.48	1239.43	1221.32	1241.48	1240.03	1203.64	1240.03	1236.22	1184.56	1236.22	1179.42	1234.90	1180.53	1234.90	1235.95	1234.81	1235.95	1237.76	1228.36	1237.76	1239.43	1226.95291	
11/7/2019	1233.63	1241.93	1239.75	1221.56	1241.93	1240.41	1195.41	1240.41	1236.46	1184.33	1236.46	1179.42	1235.02	1180.53	1235.02	1236.03	1234.78	1236.03	1237.93	1228.65	1237.93	1239.75	1225.96299	
11/8/2019	1233.69	1241.99	1239.85	1221.46	1241.99	1240.47	1182.55	1240.47	1236.49	1184.26	1236.49	1179.42	1235.53	1180.53	1235.53	1236.31	1235.01	1236.31	1238.05	1228.72	1238.05	1239.85	1224.6649	
11/9/2019	1234.43	1243.02	1240.65	1223.52	1243.02	1241.53	1185.24	1241.53	1237.59	1184.23	1237.59	1179.42	1236.35	1180.53	1236.35	1237.04	1235.68	1237.04	1238.88	1229.79	1238.88	1240.65	1210.45972	
11/10/2019	1234.28	1242.82	1240.42	1223.59	1242.82	1241.30	1184.89	1241.30	1237.22	1184.19	1237.22	1179.42	1236.06	1180.53	1236.06	1236.78	1235.41	1236.78	1238.66	1229.55	1238.66	1240.42	1202.16001	
11/11/2019	1233.12	1241.55	1239.32	1220.43	1241.55	1240.01	1181.74	1240.01	1235.85	1184.30	1235.85	1179.42	1234.79	1180.53	1234.79	1235.63	1234.33	1235.63	1237.52	1228.14	1237.52	1239.32	1199.21229	
11/12/2019	1231.68	1240.13	1237.94	1219.57	1240.13	1238.57	1181.87	1238.57	1234.24	1184.30	1234.24	1179.42	1233.28	1180.53	1233.28	1234.12	1232.85	1234.12	1236.09	1226.76	1236.09	1237.94	1197.07918	
11/13/2019	1230.77	1238.69	1236.95	1217.63	1238.69	1236.85	1180.88	1236.85	1232.86	1184.13	1232.86	1179.42	1232.57	1180.53	1232.57	1231.72	1231.34	1231.72	1233.34	1225.20	1235.20	1236.95	1193.84662	
11/14/2019	1231.95	1240.12	1238.20	1218.00	1240.12	1238.55	1181.17	1238.55	1234.61	1184.27	1234.61	1179.42	1233.87	1180.53	1233.87	1234.53	1232.87	1234.53	1236.33	1226.23	1236.33	1238.20	1194.70315	
11/15/2019	1233.17	1241.32	1240.00	1211.30	1241.32	1240.14	1181.08	1240.14	1239.38	1184.14	1239.38	1180.28	1237.64	1180.53	1237.64	1237.53	1235.46	1237.53	1238.60	1223.35	1238.60	1240.00	1196.26694	
11/16/2019	1234.66	1242.82	1241.60	1212.57	1242.82	1241.77	1182.29	1241.77	1241.57	1184.30	1241.57	1182.06	1239.56	1180.53	1239.56	1239.34	1237.12	1237.12	1239.34	1240.25	1242.95	1241.60	1197.21768	
11/17/2019	1235.38	1244.00	1242.23	1218.42	1244.00	1242.89	1187.78	1242.89	1242.04	1184.51	1242.04	1180.75	1239.63	1180.53	1239.63	1239.55	1237.35	1239.55	1240.72	1225.52	1240.72	1242.23	1196.98496	
11/18/2019	1235.93	1244.82	1242.65	1222.21	1244.82	1243.72	1196.78	1243.72	1242.47	1184.25	1242.47	1179.42	1239.17	1180.53	1239.17	1239.72	1237.56	1239.72	1241.11	1225.96	1241.11	1242.65	1198.142	
11/19/2019	1236.36	1245.22	1243.15	1222.50	1245.22	1244.19	1196.72	1244.19	1243.02	1184.35	1243.02	1179.42	1239.71	1180.53	1239.71	1240.19	1238.00	1240.19	1241.52	1226.43	1241.52	1243.15	1197.07098	
11/20/2019	1237.36	1246.12	1244.21	1223.39	1246.12	1245.26	1194.89	1245.26	1244.18	1184.29	1244.18	1179.42	1240.80	1180.53	1240.80	1241.27	1241.27	1242.57	1242.57	1244.21	1244.21	1197.78845		
11/21/2019	1238.05	1246.81	1244.89	1223.73	1246.81	1245.94	1194.25	1245.94	1244.94	1184.11	1244.94	1179.42	1241.59	1180.53	1241.59	1241.98	1239.75	1241.98	1243.28	1228.26	1243.28	1244.89	1198.39403	
11/22/2019	1238.31	1247.11	1245.47	1218.06	1247.11	1246.38	1195.39	1246.38	1246.66	1184.41	1246.66	1179.42	1243.27	1180.53	1243.27	1242.75	1240.47	1242.75	1243.98	1231.75	1243.98	1245.47	1206.49	
11/23/2019	1238.73	1247.30	1245.73	1219.63	1247.30	1246.35	1208.46	1246.35	1246.16	1184.40	1246.16	1179.42	1243.84	1180.53	1243.84	1243.27	1240.95	1243.27	1244.38	1232.02	1244.38	1245.73	1208.84	
11/24/2019	1238.97	1247.62	1246.13	1219.77	1247.62	1246.59	1209.97	1246.59	1246.15	1184.22	1246.15	1178.29	1244.38	1173.64	1244.38	1243.83	1244.88	1243.83	1244.88	1232.35	1244.88	1246.13	1209.60502	
11/25/2019	1239.38	1247.77	1246.17	1219.70	1247.77	1246.74	1180.90	1246.74	1244.49	1184.39	1244.49	1178.61	1244.45	1161.68	1244.45	1243.84	1241.55	1243.84	1244.86	1232.43	1244.86	1246.17	1209.13503	
11/26/2019	1239.83	1248.13	1246.82	1216.90	1248.13	1246.96	1182.46	1246.96	NA	1183.20	NA	1178.36	1245.17	1163.30	1245.17	1244.67	1242.65	1244.67	1245.62	1231.61	1245.62	1246.82	1209.91647	
11/27/2019	1240.04	1248.62	1247.24	1215.34	1248.62	1247.38	1184.63	1247.38	NA	1176.84	NA	1178.46	1245.70	1163.01	1245.70	1245.16	1242.61	1242.61	1245.16	1246.06	1231.05	1246.06	1247.24	1210.02399
11/28/2019	1240.08	1248.39	1247.03	1219.94	1248.39	1247.08	1184.21	1247.08	NA	1176.75	NA	1176.77	1245.43	1166.49	1245.43	1244.98	1242.31	1244.98	1245.88	1234.03	1245.88	1247.03	1208.9721	
11/29/2019	1240.76	1249.28	1247.91	1219.91	1249.28	1247.86	1180.59	1247.86	NA	1169.08	NA	1178.64	1246.15	1161.03	1246.15	1245.60	1242.98	1245.60	1246.55	1234.46	1246.55	1247.91	1211.34012	
11/30/2019	1241.01	1249.56	1248.15	1220.89	1249.56	1248.15	1180.60	1248.15	NA	1170.53	NA	1179.71	1246.13	1160.56	1246.13	1245.72	1243.18	1243.18	1246.89	1234.96	1246.89	1248.15	1211.44327	

All measurements in elevation above mean sea level.

NA or NM = Not measured or otherwise not available

No data were available for the following dates/wells:

11/26/2019 - 12/5/2019: O-03 Bladder pump/tubing retrieval

**Q4 2019 HYDRAULIC GRADIENT, DAILY AVERAGE WATER LEVEL ELEVATIONS,
OBSERVATION AND RECOVERY WELLS**

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FLORENCE COPPER INC.
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Table 3. December 2019 Daily Average Water Level Elevations

Date	R-01	O-01	O-07	R-02	O-01	O-02	R-03	O-02	O-03	R-04	O-03	R-05	O-04	R-06	O-04	O-05	R-07	O-05	O-06	R-08	O-06	O-07	R-09
12/1/2019	1240.76	1249.28	1247.91	1219.91	1249.28	1247.86	1180.59	1247.86	NA	1169.08	NA	1178.64	1246.15	1161.03	1246.15	1245.60	1242.98	1245.60	1246.55	1234.46	1246.55	1247.91	1211.34012
12/2/2019	1241.17	1249.28	1247.91	1220.38	1249.80	1248.34	1176.43	1248.34	NA	1156.82	NA	1176.45	1246.41	1160.01	1246.41	1246.16	1243.43	1246.16	1247.08	1235.30	1247.08	1248.36	1211.14804
12/3/2019	1241.47	1249.80	1248.36	1220.52	1250.20	1248.73	1177.09	1248.73	NA	1153.59	NA	1175.85	1246.64	1159.93	1246.64	1246.45	1243.75	1246.45	1247.38	1235.73	1247.38	1248.68	1211.57
12/4/2019	1239.81	1246.39	1247.66	1216.50	1246.39	1245.95	1193.40	1245.95	NA	1153.07	NA	1178.17	1248.59	1187.08	1248.59	1247.86	1244.48	1247.86	1247.66	1235.40	1247.66	1247.66	1212.77689
12/5/2019	1239.43	1245.60	1247.57	1215.69	1245.60	1245.39	1198.78	1245.39	NA	1151.96	NA	1177.64	1248.99	1197.13	1248.99	1248.20	1244.72	1248.20	1247.78	1235.45	1247.78	1247.57	1212.50663
12/6/2019	1241.33	1246.01	1248.28	1215.54	1246.01	1245.55	1189.64	1245.55	1246.33	1168.73	1246.33	1176.87	1249.64	1203.76	1249.64	1249.22	1246.54	1249.22	1248.71	1236.30	1248.71	1248.28	1204.92421
12/7/2019	1242.46	1245.91	1248.35	1214.86	1245.91	1245.28	1182.85	1245.28	1246.20	1144.38	1246.20	1175.77	1249.84	1211.96	1249.84	1249.60	1247.26	1249.60	1248.96	1236.59	1248.96	1248.35	1198.60762
12/8/2019	1242.55	1246.00	1248.54	1214.67	1246.00	1245.41	1182.14	1245.41	1246.60	1142.07	1246.60	1175.43	1249.98	1211.49	1249.98	1249.66	1247.42	1249.66	1249.14	1236.87	1249.14	1248.54	1198.88845
12/9/2019	1242.45	1245.94	1248.44	1214.43	1245.94	1245.36	1181.42	1245.36	1246.60	1139.44	1246.60	1174.56	1249.81	1210.81	1249.81	1249.62	1247.43	1249.62	1249.01	1236.94	1249.01	1248.44	1198.05416
12/10/2019	1243.30	1247.27	1247.78	1220.38	1247.27	1246.86	1196.22	1246.86	NA	1173.63	NA	1208.17	1250.55	1210.04	1250.55	1250.09	1247.78	1250.09	1249.46	1238.59	1249.46	1247.78	1210.00
12/11/2019	1244.26	1248.43	1249.93	1222.34	1248.43	1247.18	1197.77	1247.18	NA	1177.08	NA	1214.90	1250.59	1210.18	1250.59	1250.17	1247.83	1250.17	1249.85	1239.24	1249.85	1249.93	1211.16736
12/12/2019	1244.71	1249.05	1250.35	1222.80	1249.05	1247.79	1197.99	1247.79	NA	1177.53	NA	1215.26	1251.02	1210.15	1251.02	1250.63	1248.30	1250.63	1250.34	1239.94	1250.34	1250.35	1211.81376
12/13/2019	1245.20	1250.71	1250.40	1225.22	1250.71	1250.09	1196.55	1250.09	1261.84	1178.29	1261.84	1215.67	1250.97	1208.69	1250.97	1250.29	1247.86	1250.29	1250.06	1239.52	1250.06	1250.40	1211.8349
12/14/2019	1245.26	1251.65	1250.18	1226.77	1251.65	1251.44	1198.39	1251.44	1261.95	1178.77	1261.95	1215.78	1250.71	1206.61	1250.71	1249.80	1249.51	1249.51	1239.09	1249.51	1250.18	1212.27519	
12/15/2019	1244.81	1252.06	1250.52	1227.93	1252.06	1251.88	1198.94	1251.88	1262.29	1178.08	1262.29	1215.95	1251.02	1208.02	1251.02	1250.14	1247.52	1250.14	1249.68	1239.61	1249.68	1250.52	1212.46782
12/16/2019	1245.87	1252.26	1250.84	1226.98	1252.26	1251.99	1196.88	1251.99	1261.48	1166.94	1261.48	1215.41	1251.15	1207.54	1251.15	1250.36	1247.95	1250.36	1250.00	1240.27	1250.00	1250.84	1212.50572
12/17/2019	1246.76	1252.73	1251.66	1226.90	1252.73	1252.03	1197.83	1252.03	1261.10	1173.80	1261.10	1216.06	1251.11	1209.49	1251.11	1251.17	1249.39	1251.17	1251.33	1242.89	1251.33	1251.66	1211.97887
12/18/2019	1247.23	1253.07	1252.01	1226.90	1253.07	1252.19	1198.38	1252.19	NA	1172.86	NA	1213.21	1251.24	1209.56	1251.24	1251.65	1250.18	1251.65	1251.87	1244.41	1251.87	1252.01	1211.4287
12/19/2019	1247.06	1252.82	1251.74	1226.45	1252.82	1251.87	1199.16	1251.87	NA	1171.72	NA	1212.62	1250.97	1209.93	1250.97	1251.44	1250.03	1251.44	1251.60	1244.55	1251.60	1251.74	1211.10576
12/20/2019	1245.50	1250.77	1250.31	1223.92	1250.77	1249.89	1196.37	1249.89	1254.32	1170.84	1254.32	1212.48	1250.40	1207.33	1250.40	1250.53	1248.86	1250.53	1250.26	1243.17	1250.26	1250.31	1210.82256
12/21/2019	1243.97	1249.09	1248.84	1222.01	1249.09	1248.27	1195.30	1248.27	1246.50	1167.59	1246.50	1210.94	1248.82	1206.20	1248.82	1249.05	1247.46	1249.05	1248.79	1241.67	1248.79	1248.84	1209.54743
12/22/2019	1243.17	1248.27	1248.09	1220.95	1248.27	1247.47	1195.12	1247.47	1245.48	1165.81	1245.48	1209.91	1247.98	1205.11	1247.98	1248.30	1246.49	1248.30	1248.09	1241.05	1248.09	1248.09	1209.04209
12/23/2019	1242.20	1247.55	1247.42	1219.77	1247.55	1246.65	1190.12	1246.65	1244.96	1163.29	1244.96	1208.96	1247.24	1203.30	1247.24	1247.54	1247.54	1247.54	1247.30	1240.49	1247.30	1247.42	1208.38
12/24/2019	1241.09	1247.10	1247.14	1219.30	1247.10	1246.37	1186.69	1246.37	1245.68	1162.09	1245.68	1208.90	1247.21	1200.82	1247.21	1247.38	1245.52	1247.38	1247.08	1240.35	1247.08	1247.14	1208.80845
12/25/2019	1241.06	1246.95	1247.03	1218.28	1246.95	1246.18	1184.96	1246.18	1246.12	1160.74	1246.12	1208.68	1246.97	1194.56	1246.97	1247.16	1245.34	1247.16	1246.99	1240.50	1246.99	1247.03	1208.46949
12/26/2019	1240.47	1247.05	1247.12	1218.11	1247.05	1246.22	1181.38	1246.22	1247.06	1158.71	1247.06	1209.37	1247.27	1245.98	1247.27	1245.46	1247.37	1247.37	1247.10	1239.71	1247.10	1247.12	1209.03498
12/27/2019	1240.55	1248.71	1248.73	1220.43	1248.71	1248.04	1189.23	1248.04	1250.15	1156.77	1250.15	1210.86	1249.37	1198.55	1249.37	1249.25	1247.18	1249.25	1248.78	1248.78	1248.73	1210.96088	
12/28/2019	1241.79	1249.92	1249.96	1221.48	1249.92	1249.23	1190.14	1249.23	1251.56	1156.04	1251.56	1211.78	1250.60	1200.46	1250.60	1250.46	1248.38	1250.46	1250.01	1239.84	1250.01	1249.96	1212.46089
12/29/2019	1242.94	1250.66	1250.75	1222.07	1250.66	1249.96	1187.86	1249.96	1252.66	1156.94	1252.66	1212.20	1251.25	1199.87	1251.25	1251.16	1249.12	1251.16	1250.82	1241.32	1250.82	1250.75	1212.97553
12/30/2019	1245.91	1251.14	1251.11	1222.37	1251.14	1250.44	1194.65	1250.44	1252.61	1160.16	1252.61	1211.97	1251.24	1206.73	1251.24	1251.42	1249.57	1251.42	1251.16	1243.56	1251.16	1251.11	1212.00
12/31/2019	1244.15	1251.49	1251.40	1220.98	1251.49	1250.64	1194.11	1250.64	1253.68	1161.36	1253.68	1211.88	1251.57	1204.64	1251.57	1251.70	1249.82	1251.70	1251.44	1244.48	1251.44	1251.40	1212.09195

All measurements in elevation above mean sea level.

NA or NM = Not measured or otherwise not available

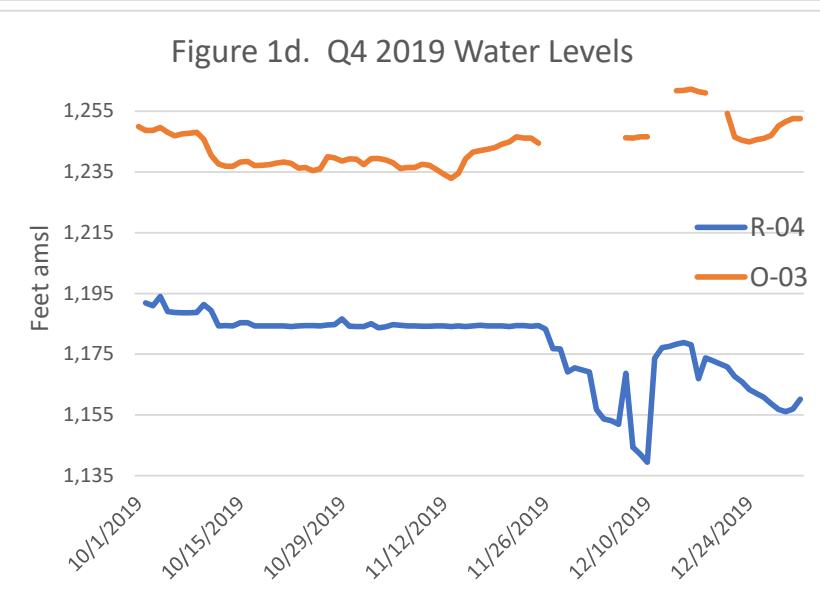
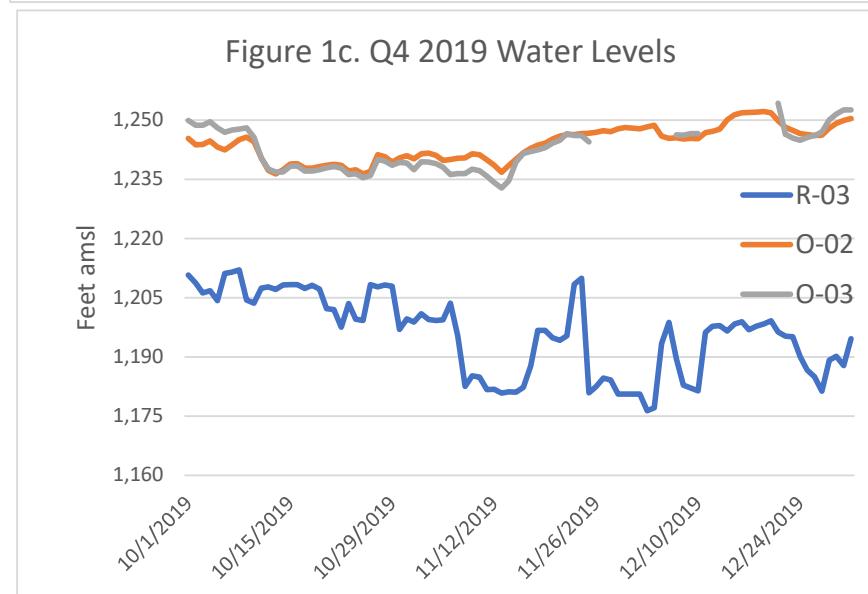
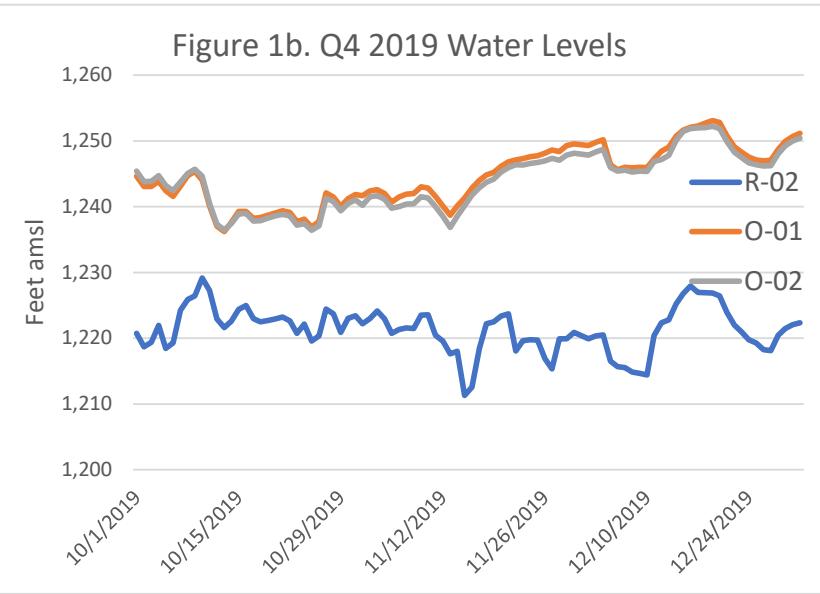
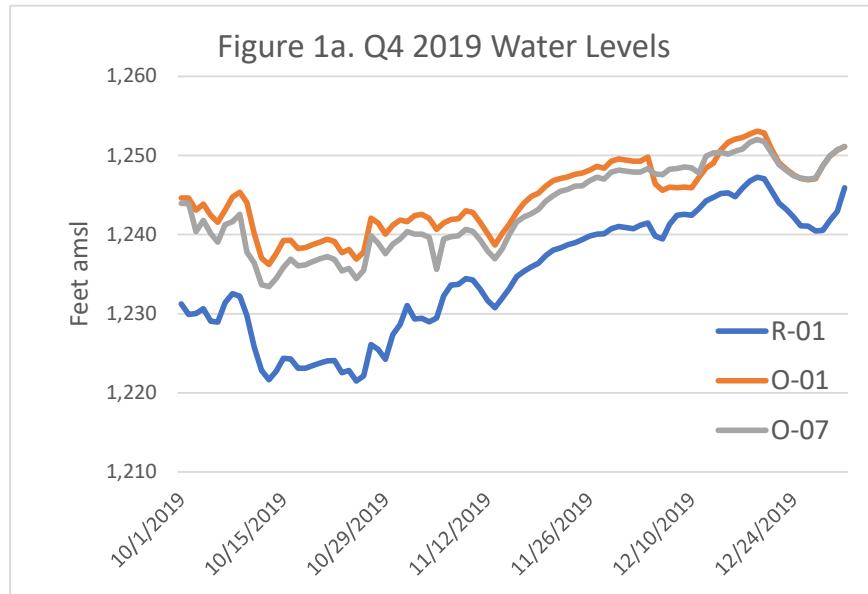
No data were available for the following dates/wells:

11/26/2019 - 12/5/2019: O-03 Bladder pump/tubing retrieval

12/10/2019 - 12/12/2019: O-03 Bladder pump/tubing retrieval

12/18/2019 - 12/19/2019: O-03 Bladder pump/tubing retrieval and redevelopment

Hydraulic Gradient - Daily Average Water Level Elevations - Observation and Recovery Wells



Hydraulic Gradient - Daily Average Water Level Elevations - Observation and Recovery Wells

Figure 1e. Q4 2019 Water Levels

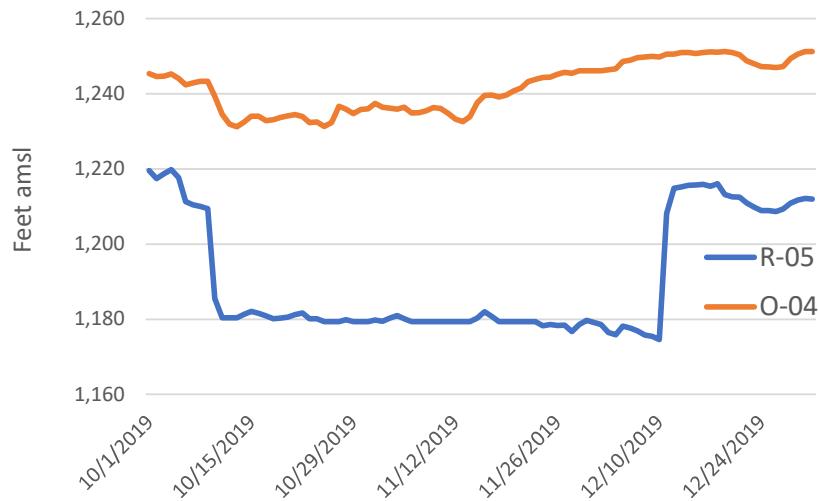


Figure 1f. Q4 2019 Water Levels



Figure 1g. Q4 2019 Water Levels

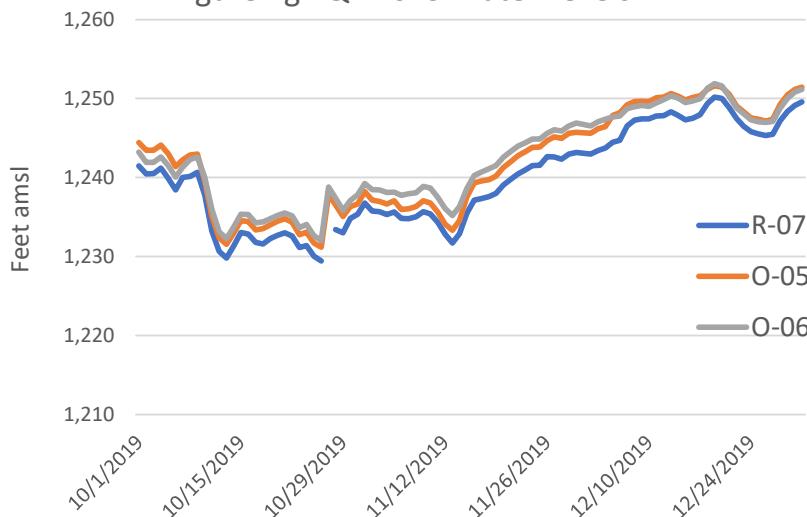
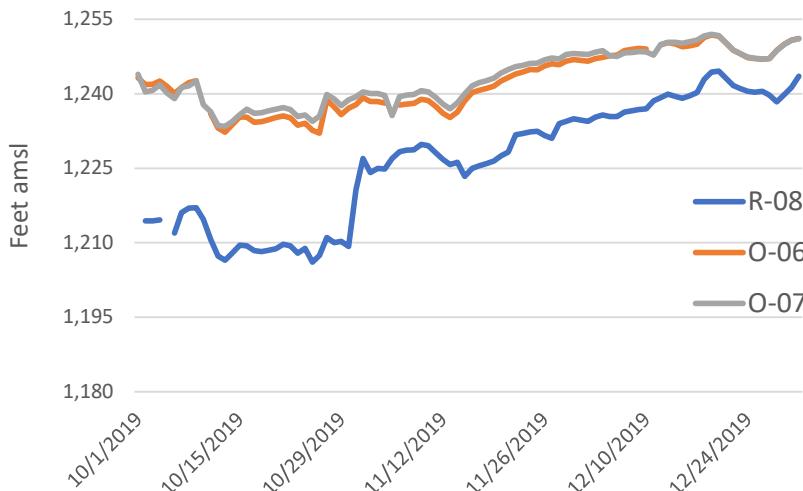


Figure 1h. Q4 2019 Water Levels



ATTACHMENT 4

Table and Graphs of Fluid Electrical Conductivity Measurements

**Q4 2019 DAILY FLUID ELECTRICAL CONDUCTIVITY
INJECTION AND OBSERVATION WELLS
FLORENCE COPPER INC.
FLORENCE, ARIZONA**

Page 1 of 3

Table 1. October 2019 Daily Fluid Electrical Conductivity Readings

Date	I-01	I-02	I-03	I-04	O-01	O-02	O-03	O-04	O-05	O-06	O-07
10/1/2019	57218	57743	57256	57509	3945	3237	4733	5276	1598	2866	3296
10/2/2019	69419	69558	69600	69501	4841	4068	5719	6457	1970	3585	3975
10/3/2019	70304	70488	70555	69875	4708	3883	5650	6423	1995	3490	3750
10/4/2019	74411	74427	74316	74434	4710	4168	6302	7287	2174	3831	4335
10/5/2019	68668	70504	71200	69846	4875	4380	6560	7695	2276	3917	4627
10/6/2019	71822	72175	70945	71610	4886	4177	6165	7257	2137	3764	4440
10/7/2019	70523	70810	70767	70609	4080	3642	5545	6383	1921	3317	3617
10/8/2019	70361	70306	70045	70099	4766	4262	6033	7023	2145	3712	3580
10/9/2019	70616	70577	70600	70479	4630	4231	5999	6772	2086	3759	4274
10/10/2019	71350	71911	71590	71736	4347	3798	5636	6410	1941	3535	3091
10/11/2019	72443	72440	72395	72812	4731	3760	6096	6837	2101	3827	4394
10/12/2019	72696	72725	72714	72674	4653	3837	6114	5894	2011	3780	4612
10/13/2019	70380	71087	70416	70541	3754	3220	4860	4429	1575	3082	3939
10/14/2019	69311	69026	68873	68810	4755	4114	6207	5521	1987	3870	3855
10/15/2019	71947	71946	71770	71803	4581	3905	6103	5387	1947	3796	4985
10/16/2019	72569	72641	NA	72469	4929	4157	6511	4596	2087	4166	5036
10/17/2019	71207	71055	NA	70975	3481	2972	4654	4462	2037	3998	4873
10/18/2019	69475	70841	NA	70574	4791	4082	6390	4447	1959	4140	4940
10/19/2019	73014	73284	NA	73365	4534	3794	5842	4291	2250	4080	4852
10/20/2019	73540	73615	NA	73459	4551	3871	6240	3950	1883	3935	4817
10/21/2019	73818	74197	NA	74057	4567	3850	6427	3931	1839	4036	4764
10/22/2019	71850	71926	NA	71548	3976	3475	5666	3516	1696	3679	4301
10/23/2019	69837	69407	NA	70617	3880	3341	5611	3444	1605	3456	4127
10/24/2019	71265	71200	NA	71264	4430	3818	6303	3835	1846	3991	4581
10/25/2019	69363	68279	NA	68889	4030	3420	5848	3489	1604	3595	4140
10/26/2019	70315	70333	NA	70192	4380	3677	6404	3714	1720	3933	4550
10/27/2019	71877	72008	NA	71910	4162	3587	6190	3771	1699	3765	4347
10/28/2019	71705	72270	NA	72381	4136	3626	6338	3868	1698	3966	4230
10/29/2019	74211	74431	NA	74153	4550	3954	6988	3890	1831	4423	4831
10/30/2019	77561	77512	NA	78219	4489	3985	6731	3849	1877	4084	4694
10/31/2019	74261	74065	NA	74051	3720	3399	5832	3025	1500	4166	4913

Notes:

All measurements in microsiemens per centimeter ($\mu\text{S}/\text{cm}$)

NA or NM = Not measured or otherwise not available

I-03 equipment retrieval, conversion to recovery well 10/16/2019 - 10/30/2019

I-03 operated as recovery well 10/31/2019 - 11/14/2019, converted back to injection on 11/15/2019

INJECTION AND OBSERVATION WELLS

FLORENCE COPPER INC.

FLORENCE, ARIZONA

Table 2. November 2019 Daily Fluid Electrical Conductivity Readings

Date	I-01	I-02	I-03	I-04	O-01	O-02	O-03	O-04	O-05	O-06	O-07
11/1/2019	69498	69410	NA	69021	4816	4451	7540	3339	1866	4547	5106
11/2/2019	70021	70519	NA	70599	6162	4062	7093	3181	1847	4454	5239
11/3/2019	68581	68224	NA	68159	4519	3929	6905	2916	1773	4289	5078
11/4/2019	69186	69033	NA	69110	4523	3998	6966	2981	1782	4317	5148
11/5/2019	67487	67505	NA	67334	4264	3826	6650	2822	1690	4021	4761
11/6/2019	67200	68996	NA	68854	4452	4019	7053	3076	1808	3900	5143
11/7/2019	67780	67896	NA	67384	4321	4323	6880	2409	1687	3992	5269
11/8/2019	68469	68392	NA	68228	4265	4337	6581	2333	1607	3970	5280
11/9/2019	68267	68651	NA	68582	4581	4668	7095	2480	1736	4520	5754
11/10/2019	67135	67366	NA	67399	3846	3834	6133	2070	1532	4818	3848
11/11/2019	67376	67783	NA	67821	4006	4075	6336	1951	1535	4001	5039
11/12/2019	64336	64426	NA	64434	4199	4453	6608	2159	1593	4172	5268
11/13/2019	70729	70758	NA	70567	4209	4440	6711	2529	1587	4319	5332
11/14/2019	70005	70126	NA	69885	4187	4381	6658	1993	1582	4272	5399
11/15/2019	68095	68201	NA	68219	3282	3363	5226	1978	1218	3256	4257
11/16/2019	62743	62663	61953	62722	3797	3611	5938	3192	1435	3612	4462
11/17/2019	63168	63246	63028	63032	3810	3654	6184	3810	1727	3497	4225
11/18/2019	63314	63375	63080	63005	3883	3804	6477	3599	1611	3447	4205
11/19/2019	69577	70097	69423	69810	3596	3837	6095	3357	1405	3256	3935
11/20/2019	70254	69979	70009	69822	4296	4554	7299	4347	1663	3761	4744
11/21/2019	71043	71102	70950	70854	3790	4020	6514	3372	1594	3477	4201
11/22/2019	72910	72060	72030	72479	4033	4240	6967	3975	1587	3716	4374
11/23/2019	67695	67664	67716	67623	4101	4167	NA	1609	1621	3749	4406
11/24/2019	46919	46622	46764	46961	4024	4179	NA	2061	1588	3679	4142
11/25/2019	61840	62015	62051	62193	3967	4173	NA	2049	1578	3394	4092
11/26/2019	73725	73499	73649	73695	3458	3768	NA	1757	1375	3218	3678
11/27/2019	72169	70775	71861	71761	4393	4531	NA	2475	1850	4053	4518
11/28/2019	71572	71722	71753	71722	4318	4554	NA	2314	1725	4019	4573
11/29/2019	71375	70927	70902	70723	3812	3868	NA	2068	1067	3417	3434
11/30/2019	70719	70858	70764	70855	4565	4982	NA	2788	1847	4284	4874

Notes:All measurements in microsiemens per centimeter ($\mu\text{S}/\text{cm}$)

NA or NM = Not measured or otherwise not available

I-03 operated as recovery well 10/31/2019 - 11/14/2019, converted back to injection on 11/15/2019.

O-03 removal of bladder pump and tubing/redevelop well 11/23/2019 - 12/5/2019

INJECTION AND OBSERVATION WELLS

FLORENCE COPPER INC.

FLORENCE, ARIZONA

Table 3. December 2019 Daily Fluid Electrical Conductivity Readings

Date	I-01	I-02	I-03	I-04	O-01	O-02	O-03	O-04	O-05	O-06	O-07
12/1/2019	70325	70479	70262	70490	4218	4451	NA	2011	1707	3895	4488
12/2/2019	71753	72017	72029	71629	4578	4734	NA	2465	1793	3783	4875
12/3/2019	71948	71783	71798	71678	4555	4729	NA	2929	1789	4120	4787
12/4/2019	69845	69943	69869	69803	4234	4323	NA	2745	1645	3794	4343
12/5/2019	NA	70027	69953	69950	4633	4284	NA	3116	1884	4189	4663
12/6/2019	70616	70642	NA	70533	4307	3209	11544	2331	1750	3459	3913
12/7/2019	NA	69901	70474	69978	4594	3263	11488	3364	1844	3693	4041
12/8/2019	NA	70245	69890	69952	4777	3351	11812	3789	1981	3957	4074
12/9/2019	NA	68880	68880	68437	4721	3325	11782	3732	1934	3949	4042
12/10/2019	NA	70844	70875	70973	4761	3284	NA	2824	1980	4128	3977
12/11/2019	NA	72449	72483	72373	4821	3343	NA	3579	2031	3880	4131
12/12/2019	72416	NA	73493	72640	4816	3332	NA	2903	2027	4097	4214
12/13/2019	71290	NA	71474	71353	4502	3160	NA	2854	1941	3671	4236
12/14/2019	69430	69395	69385	NA	4586	4072	11129	2982	1942	4080	4824
12/15/2019	65745	66028	65693	NA	4395	4478	11198	4549	1920	3899	4780
12/16/2019	70275	70172	70255	NA	4416	4485	11202	2726	1881	3976	4485
12/17/2019	70276	70218	70148	NA	4510	4406	NA	2217	1913	3960	4609
12/18/2019	53457	54552	NA	54618	4532	4221	NA	1880	1824	3903	4710
12/19/2019	69906	69950	NA	69880	4406	4653	NA	2900	1597	4198	4922
12/20/2019	69653	71752	NA	71559	4304	4584	NA	2155	1507	4356	4739
12/21/2019	69598	69857	69779	70044	4528	4384	NA	2395	1760	4456	4881
12/22/2019	71084	71181	71286	71125	4468	3779	5911	2303	1816	4714	4598
12/23/2019	70074	70147	70168	70232	4404	3641	11319	3091	1814	5354	4546
12/24/2019	56222	56259	57515	56332	4680	3671	11737	3756	1812	5740	4690
12/25/2019	74652	73986	74056	74062	4503	3577	11515	3947	1764	5277	4591
12/26/2019	65534	65937	65857	65424	4355	3672	11266	3874	1795	5272	4472
12/27/2019	64672	64550	64357	64562	4397	4129	11671	4214	1836	4970	4523
12/28/2019	74375	74442	74391	74379	4458	4131	11601	2478	1819	4702	4368
12/29/2019	73860	73775	73835	73957	4812	4678	12904	4633	2003	5031	4781
12/30/2019	74925	74590	74620	74079	4307	3209	11544	2331	1750	3459	3913
12/31/2019	75381	75507	75348	75180	4433	2923	12263	4236	1843	5939	4511

Notes:All measurements in microsiemens per centimeter ($\mu\text{S}/\text{cm}$)

NA or NM = Not measured or otherwise not available

Injection Well MIT, video, and temperature logging conducted on the 4 injection wells from 12/4/2019 - 12/20/2019.

I-01 was off on 12/5/2019 for video and temperature logging, and from 12/7/2019 - 12/11/2019 for MIT.

I-02 off 12/12/2019 - 12/13/2019 for MIT.

I-03 was off on 12/6/2019.

I-03 was off from 12/18/2019 - 12/20/2019 for MIT.

I-04 was off from 12/14/2019 - 12/17/2019 for MIT.

O-03 removal of bladder pump and tubing/redevelop well 11/23/2019 - 12/5/2019, 12/10/2019 - 12/13/2019, and 12/17/2019 - 12/21/2019. Observation well O-03 was thickly encrusted with gypsum crystals which were disturbed while recovering the bladder pump and tubing. This resulted in a large increase in conductivities from samples collected beginning 12/6/2019. The well is scheduled for redevelopment in Q1 2020.

Figure 1. Daily Fluid Electrical Conductivity - Injection Wells

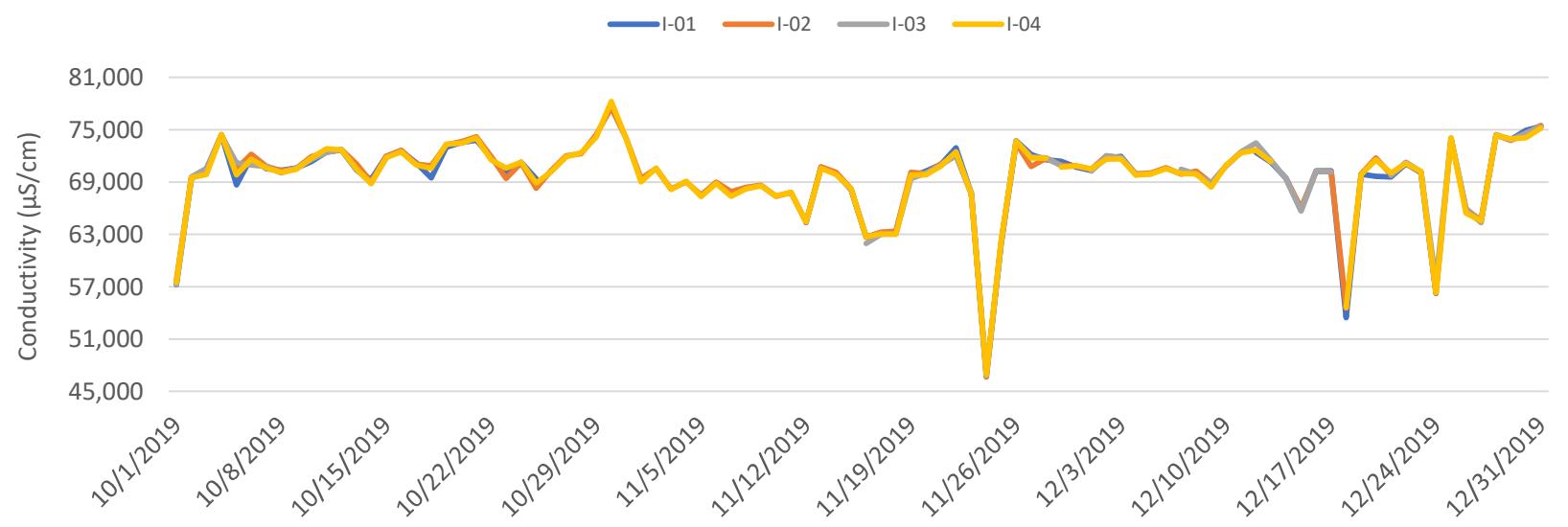
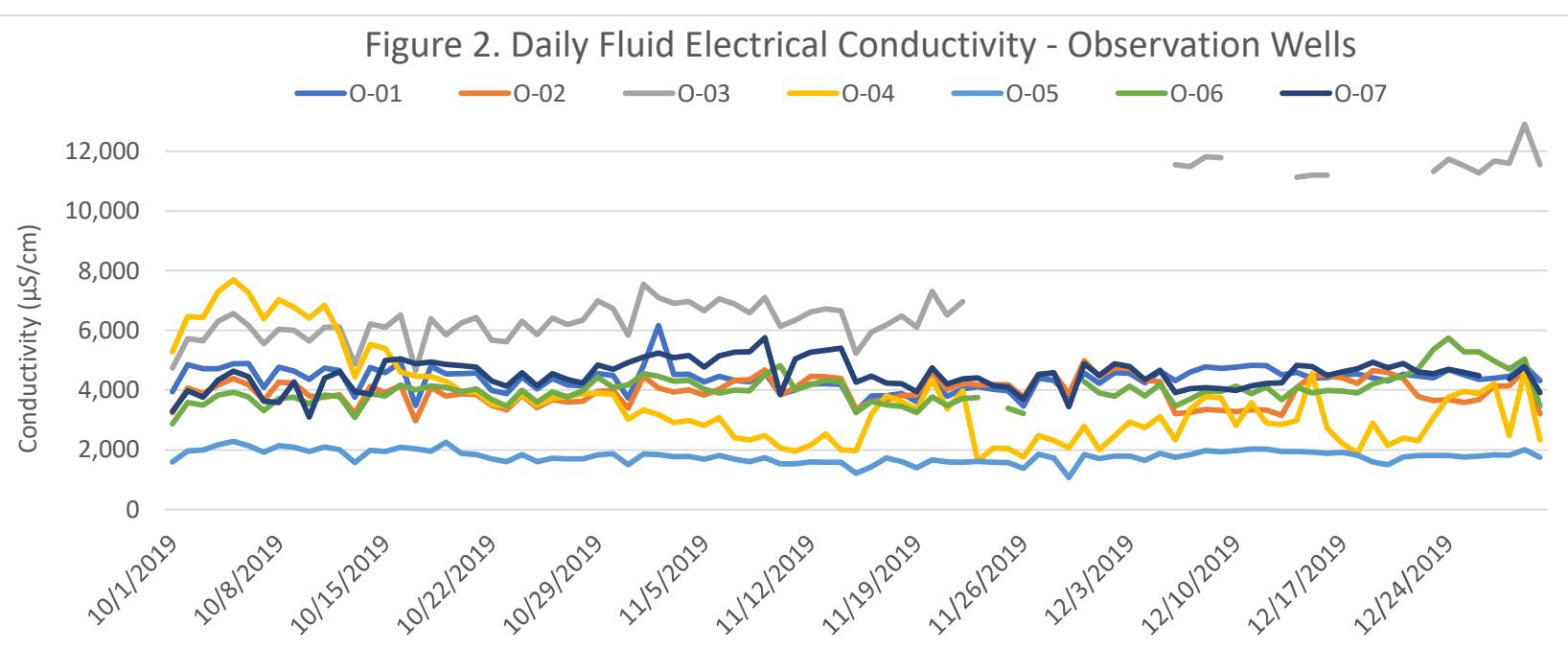


Figure 2. Daily Fluid Electrical Conductivity - Observation Wells



ATTACHMENT 5

Table and Graphs of Bulk Electrical Conductivity Measurements

MEMORANDUM

13 January 2020
File No. 132473-003

TO: Florence Copper Inc.
Mr. Richard Tremblay, Vice President Operations

C: Florence Copper Inc.
Mr. Ian Ream, Senior Hydrogeologist

FROM: Haley & Aldrich, Inc.
Mark Nicholls, R.G.

SUBJECT: Summary of Bulk Conductivity Monitoring Results, Fourth Quarter 2019
Production Test Facility
Florence Copper Inc., Florence, Arizona



Haley & Aldrich, Inc. (Haley & Aldrich) has conducted statistical analysis of bulk electrical conductivity (EC) data collected by HydroGeophysics, Inc. at the Florence Copper Inc. (Florence Copper) Production Test Facility (PTF) located in Florence, Arizona, in accordance with Temporary Aquifer Protection Permit (APP) No. 106360 and the Underground Injection Control (UIC) Permit No R9UIC-AZ3-FR11-1. The procedures used to complete the analysis were described in the document titled *Procedures for Determining Bulk Electrical Conductivity Alert Levels* (Haley & Aldrich, 2018)¹. The alert levels (AL) for bulk EC were approved in the letter issued by the U.S. Environmental Protection Agency dated 14 December 2018 and were adopted into the APP issued by the Arizona Department of Environmental Quality (ADEQ) on 5 December 2018 and renewed on 26 November 2019.

Alert Levels

To ensure that in-situ copper recovery fluids do not enter the Lower Basin Fill Unit (LBFU) from the Bedrock Oxide Unit, the three upper horizons (1 through 3) are monitored. The following ALs were established for these horizons:

Electrode Pair Horizon	Proposed Alert Level (ohm-meters)
Horizon 1	9.93
Horizon 2	10.12
Horizon 3	10.33

¹ Haley & Aldrich, Inc., 2018. *Procedures for Determining Bulk Electrical Conductivity Alert Levels, Production Test Facility, Florence Copper Project*. August.

The ALs represent minimum values. Consequently, an exceedance is indicated if the measured apparent resistivity in one of these horizons is *lower* than the established AL on three adjacent or intersecting current paths.

Fourth Quarter 2019 Monitoring Results

Fourth quarter (Q4) 2019 includes 21 monitoring events for bulk EC between 4 October and 31 December 2019. Monitoring events were conducted on a weekly basis and at more frequent intervals following observed AL exceedances. Five sensor pairs located on three monitoring horizons had confirmed exceedances of their respective ALs during Q4 2019. The exceedances were first observed from the data collected on 21 November 2019 and persisted through the final Q4 monitoring event on 31 December 2019. Linear contour maps for the monitoring period detail these results (Figures 1 through 21).

Data Summary

Tables 1 through 3 list the apparent resistivity results over this monitoring period for Horizons 1 through 3, respectively.

Relative to the baseline dataset, no outliers were detected on these monitoring dates (defined as values over 4 times the interquartile range outside the range around the data median). The grouped data from each horizon fall within the range of the baseline dataset (Attachment A).

Attachment B shows the data from each horizon over time, during the baseline period, and monitoring both before and after the PTF became operational. The data collected during Q4 is within the established tolerance limits.

EXCEEDANCES

Bulk EC data collected on 21 November 2019 and reported to Florence Copper on 2 December 2019 after statistical analysis of the raw data, indicated five sensor pairs located on three monitoring horizons exceeded their respective ALs. The exceedances were confirmed by bulk EC measurements made on 26 November and 3, 4, and 5 December 2019, and Florence Copper was notified of the confirmation on 11 December 2019. Well pairs exceeding their respective ALs are:

- Horizon 1, between wells O-05 and O-06;
- Horizon 1, between wells O-06 and O-07;
- Horizon 2, between wells O-05 to O-06;
- Horizon 3, between wells O-05 to O-06; and
- Horizon 3, between wells O-05 to O-07.

Florence Copper notified the ADEQ of the confirmed exceedances on 13 December 2019. Subsequent bulk EC measurements from those five sensor pairs have remained below their respective ALs² through the end of Q4 2019.

In accordance with Section 2.6.2.7 of APP No. P-106360, an evaluation of wellfield conditions, operations, meteorological changes, and other environmental changes was conducted, the results of which were submitted to the ADEQ in a letter dated 10 January 2020. In summary, the confirmed exceedances were caused by the cumulative effects of precipitation events occurring prior to 21 November 2019 which resulted in an increase of ambient soil moisture, decreased soil temperature, and resulted in other environmental changes affecting the surficial components of the bulk EC monitoring network, associated grounding network, and reference electrodes.

The exceedances are not the result of measurement error, data analysis error, or error in statistical analyses. The confirmed bulk EC exceedances are not the result of vertical excursion of injected fluid, no impacts to the environment are known to exist as a result of the bulk EC exceedances, and no environmental mitigation is required.

Haley & Aldrich has commenced statistical analysis of the bulk EC data for the purpose of recalculating AL values, and Florence Copper will propose revised AL values in an application to amend APP No. P-106360.

Enclosures:

- Table 1 – Bulk Electrical Conductivity Monitoring Results, Horizon 1 (40 Feet Above LBFU/Oxide Contact)
- Table 2 – Bulk Electrical Conductivity Monitoring Results, Horizon 2 (20 Feet Above LBFU/Oxide Contact)
- Table 3 – Bulk Electrical Conductivity Monitoring Results, Horizon 3 (at LBFU/Oxide Contact)
- Figure 1 – Apparent Bulk Resistivity Between Electrode Pairs by Horizon –10/04/2019, Production Test Facility
- Figure 2 – Apparent Bulk Resistivity Between Electrode Pairs by Horizon –10/11/2019, Production Test Facility
- Figure 3 – Apparent Bulk Resistivity Between Electrode Pairs by Horizon –10/18/2019, Production Test Facility
- Figure 4 – Apparent Bulk Resistivity Between Electrode Pairs by Horizon –10/24/2019, Production Test Facility
- Figure 5 – Apparent Bulk Resistivity Between Electrode Pairs by Horizon –11/01/2019, Production Test Facility

² The bulk EC AL values are a lower limit, consequently a bulk EC value below the AL is characterized as an exceedance.

- Figure 6 – Apparent Bulk Resistivity Between Electrode Pairs by Horizon –11/08/2019, Production Test Facility
Figure 7 – Apparent Bulk Resistivity Between Electrode Pairs by Horizon –11/14/2019, Production Test Facility
Figure 8 – Apparent Bulk Resistivity Between Electrode Pairs by Horizon –11/21/2019, Production Test Facility
Figure 9 – Apparent Bulk Resistivity Between Electrode Pairs by Horizon –11/26/2019, Production Test Facility
Figure 10 – Apparent Bulk Resistivity Between Electrode Pairs by Horizon –12/03/2019, Production Test Facility
Figure 11 – Apparent Bulk Resistivity Between Electrode Pairs by Horizon –12/04/2019, Production Test Facility
Figure 12 – Apparent Bulk Resistivity Between Electrode Pairs by Horizon –12/05/2019, Production Test Facility
Figure 13 – Apparent Bulk Resistivity Between Electrode Pairs by Horizon –12/11/2019, Production Test Facility
Figure 14 – Apparent Bulk Resistivity Between Electrode Pairs by Horizon –12/19/2019, Production Test Facility
Figure 15 – Apparent Bulk Resistivity Between Electrode Pairs by Horizon –12/20/2019, Production Test Facility
Figure 16 – Apparent Bulk Resistivity Between Electrode Pairs by Horizon –12/21/2019, Production Test Facility
Figure 17 – Apparent Bulk Resistivity Between Electrode Pairs by Horizon –12/23/2019, Production Test Facility
Figure 18 – Apparent Bulk Resistivity Between Electrode Pairs by Horizon –12/26/2019, Production Test Facility
Figure 19 – Apparent Bulk Resistivity Between Electrode Pairs by Horizon –12/28/2019, Production Test Facility
Figure 20 – Apparent Bulk Resistivity Between Electrode Pairs by Horizon –12/30/2019, Production Test Facility
Figure 21 – Apparent Bulk Resistivity Between Electrode Pairs by Horizon –12/31/2019, Production Test Facility
Attachment A – Box Diagrams for Second Quarter Monitoring Data
Attachment B – Summary Plot of Bulk Electrical Conductivity

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TABLES

TABLE 1
BULK ELECTRICAL CONDUCTIVITY MONITORING RESULTS
HORIZON 1 (40 FEET ABOVE LBFU/OXIDE CONTACT)
FLORENCE COPPER PROJECT
FLORENCE, ARIZONA

Electrode 1	Electrode 2	Sending Well	Receiving Well	Apparent Resistivity ($\Omega\text{-m}$)										
				10/4/2019	10/11/2019	10/18/2019	10/24/2019	11/1/2019	11/8/2019	11/14/2019	11/21/2019	11/26/2019	12/3/2019	12/4/2019
B-01-BC-01	B-02-BC-01	O-01	O-02	12.78	12.80	12.82	12.81	12.82	12.72	12.75	12.56	12.56	12.52	12.50
B-01-BC-01	B-03-BC1-02	O-01	O-03	11.36	11.38	11.44	11.42	11.46	11.29	11.33	10.91	10.89	10.81	10.79
B-01-BC-01	B-04-BC-01	O-01	O-04	13.47	13.50	13.56	13.60	13.60	13.38	13.42	12.87	12.88	12.76	12.74
B-01-BC-01	B-05-BC-01	O-01	O-05	12.42	12.44	12.50	12.51	12.54	12.35	12.36	11.87	11.90	11.77	11.77
B-01-BC-01	B-06-BC-01	O-01	O-06	11.84	11.87	11.92	11.93	11.95	11.78	11.82	11.40	11.41	11.31	11.31
B-01-BC-01	B-07-BC1-02	O-01	O-07	11.83	11.83	11.88	11.88	11.89	11.79	11.81	11.53	11.55	11.48	11.48
B-02-BC-01	B-03-BC1-02	O-02	O-03	10.45	10.47	10.50	10.51	10.51	10.38	10.42	10.12	10.08	10.06	10.04
B-02-BC-01	B-04-BC-01	O-02	O-04	14.08	14.10	14.17	14.18	14.20	13.98	14.02	13.45	13.45	13.34	13.32
B-02-BC-01	B-05-BC-01	O-02	O-05	13.64	13.67	13.75	13.77	13.75	13.54	13.59	13.03	13.04	12.93	12.93
B-02-BC-01	B-06-BC-01	O-02	O-06	13.59	13.61	13.71	13.70	13.72	13.49	13.54	12.99	13.00	12.86	12.88
B-02-BC-01	B-07-BC1-02	O-02	O-07	12.45	12.45	12.52	12.52	12.53	12.35	12.40	11.95	11.96	11.88	11.87
B-03-BC1-02	B-04-BC-01	O-03	O-04	12.59	12.61	12.66	12.68	12.67	12.51	12.56	12.17	12.13	12.06	12.06
B-03-BC1-02	B-05-BC-01	O-03	O-05	13.07	13.09	13.15	13.16	13.18	12.97	13.02	12.54	12.53	12.44	12.44
B-03-BC1-02	B-06-BC-01	O-03	O-06	14.18	14.21	14.30	14.31	14.34	14.08	14.13	13.56	13.51	13.43	13.44
B-03-BC1-02	B-07-BC1-02	O-03	O-07	13.40	13.42	13.50	13.51	13.53	13.30	13.35	12.80	12.76	12.70	12.69
B-04-BC-01	B-05-BC-01	O-04	O-05	10.75	10.77	10.80	10.82	10.81	10.74	10.75	10.59	10.59	10.56	10.55
B-04-BC-01	B-06-BC-01	O-04	O-06	12.18	12.20	12.26	12.27	12.28	12.12	12.14	11.73	11.73	11.66	11.64
B-04-BC-01	B-07-BC1-02	O-04	O-07	12.86	12.86	12.95	12.96	12.98	12.76	12.81	12.30	12.30	12.23	12.21
B-05-BC-01	B-06-BC-01	O-05	O-06	10.03	10.05	10.08	10.09	10.10	9.98	10.01	9.77	9.77	9.72	9.72
B-05-BC-01	B-07-BC1-02	O-05	O-07	10.86	10.88	10.93	10.94	10.96	10.80	10.83	10.47	10.46	10.40	10.38
B-06-BC-01	B-07-BC1-02	O-06	O-07	10.03	10.05	10.08	10.08	10.08	10.00	10.03	9.85	9.84	9.82	9.79

Notes

$\Omega\text{-m}$ = ohm-meters

LBFU = Lower Basin Fill Unit

Oxide = Bedrock Oxide Unit

Horizon 1 Alert Level = 9.93 $\Omega\text{-m}$

Alert Level Exceedance

TABLE 1
BULK ELECTRICAL CONDUCTIVITY MONITORING RESULTS
HORIZON 1 (40 FEET ABOVE LBFU/OXIDE CONTACT)
FLORENCE COPPER PROJECT
FLORENCE, ARIZONA

Electrode 1	Electrode 2	Sending Well	Receiving Well	Apparent Resistivity ($\Omega\text{-m}$)									
				12/5/2019	12/11/2019	12/19/2019	12/20/2019	12/21/2019	12/23/2019	12/26/2019	12/28/2019	12/30/2019	12/31/2019
B-01-BC-01	B-02-BC-01	O-01	O-02	12.50	12.54	12.55	12.54	12.57	12.55	12.49	12.49	12.49	12.50
B-01-BC-01	B-03-BC1-02	O-01	O-03	10.79	10.87	10.88	10.90	10.91	10.90	10.76	10.74	10.79	10.79
B-01-BC-01	B-04-BC-01	O-01	O-04	12.72	12.86	12.82	12.86	12.88	12.86	12.66	12.64	12.72	12.71
B-01-BC-01	B-05-BC-01	O-01	O-05	11.75	11.88	11.85	11.87	11.90	11.87	11.70	11.68	11.74	11.68
B-01-BC-01	B-06-BC-01	O-01	O-06	11.29	11.40	11.38	11.40	11.42	11.39	11.25	11.25	11.29	11.29
B-01-BC-01	B-07-BC1-02	O-01	O-07	11.47	11.54	11.49	11.54	11.55	11.54	11.44	11.43	11.47	11.47
B-02-BC-01	B-03-BC1-02	O-02	O-03	10.05	10.09	10.09	10.11	10.13	10.11	10.02	10.01	10.04	10.04
B-02-BC-01	B-04-BC-01	O-02	O-04	13.32	13.44	13.41	13.44	13.47	13.43	13.25	13.23	13.29	13.29
B-02-BC-01	B-05-BC-01	O-02	O-05	12.91	13.04	12.99	13.03	13.06	13.03	12.83	12.82	12.89	12.88
B-02-BC-01	B-06-BC-01	O-02	O-06	12.86	12.99	12.96	12.98	13.01	12.97	12.80	12.78	12.85	12.83
B-02-BC-01	B-07-BC1-02	O-02	O-07	11.86	11.96	11.87	11.96	11.97	11.95	11.82	11.79	11.85	11.83
B-03-BC1-02	B-04-BC-01	O-03	O-04	12.06	12.13	12.10	12.14	12.17	12.14	12.00	11.99	12.04	12.05
B-03-BC1-02	B-05-BC-01	O-03	O-05	12.43	12.52	12.50	12.54	12.56	12.53	12.36	12.35	12.41	12.39
B-03-BC1-02	B-06-BC-01	O-03	O-06	13.42	13.55	13.49	13.54	13.57	13.53	13.35	13.31	13.39	13.37
B-03-BC1-02	B-07-BC1-02	O-03	O-07	12.68	12.78	12.77	12.79	12.80	12.78	12.61	12.59	12.66	12.65
B-04-BC-01	B-05-BC-01	O-04	O-05	10.56	10.59	10.58	10.59	10.59	10.58	10.53	10.53	10.55	10.53
B-04-BC-01	B-06-BC-01	O-04	O-06	11.66	11.74	11.72	11.74	11.75	11.73	11.60	11.59	11.63	11.63
B-04-BC-01	B-07-BC1-02	O-04	O-07	12.19	12.32	12.28	12.31	12.33	12.28	12.13	12.12	12.17	12.16
B-05-BC-01	B-06-BC-01	O-05	O-06	9.71	9.77	9.74	9.76	9.78	9.77	9.67	9.67	9.71	9.70
B-05-BC-01	B-07-BC1-02	O-05	O-07	10.37	10.44	10.43	10.44	10.47	10.45	10.33	10.31	10.36	10.35
B-06-BC-01	B-07-BC1-02	O-06	O-07	9.81	9.85	9.84	9.83	9.85	9.84	9.79	9.79	9.80	9.80

Notes

$\Omega\text{-m}$ = ohm-meters

LBFU = Lower Basin Fill Unit

Oxide = Bedrock Oxide Unit

Horizon 1 Alert Level = 9.93 $\Omega\text{-m}$

Alert Level Exceedance

TABLE 2

BULK ELECTRICAL CONDUCTIVITY MONITORING RESULTS

HORIZON 2 (20 FEET ABOVE LBFU/OXIDE CONTACT)

FLORENCE COPPER PROJECT

FLORENCE, ARIZONA

Electrode 1	Electrode 2	Sending Well	Receiving Well	Apparent Resistivity ($\Omega\text{-m}$)										
				10/4/2019	10/11/2019	10/18/2019	10/24/2019	11/1/2019	11/8/2019	11/14/2019	11/21/2019	11/26/2019	12/3/2019	12/4/2019
B-01-BC-02	B-02-BC-02	O-01	O-02	14.52	14.55	14.57	14.57	14.57	14.48	14.48	14.33	14.31	14.28	14.25
B-01-BC-02	B-03-BC1-04	O-01	O-03	11.45	11.48	11.52	11.54	11.55	11.40	11.41	11.04	10.97	10.93	10.92
B-01-BC-02	B-04-BC-02	O-01	O-04	13.39	13.41	13.45	13.50	13.49	13.31	13.34	12.82	12.83	12.69	12.65
B-01-BC-02	B-05-BC-02	O-01	O-05	12.30	12.32	12.37	12.38	12.39	12.24	12.25	11.78	11.80	11.67	11.66
B-01-BC-02	B-06-BC-02	O-01	O-06	11.73	11.76	11.80	11.82	11.83	11.68	11.71	11.31	11.31	11.22	11.20
B-01-BC-02	B-07-BC1-04	O-01	O-07	11.81	11.80	11.85	11.86	11.86	11.77	11.78	11.53	11.55	11.48	11.47
B-02-BC-02	B-03-BC1-04	O-02	O-03	11.11	11.13	11.15	11.17	11.17	11.05	11.08	10.79	10.71	10.73	10.70
B-02-BC-02	B-04-BC-02	O-02	O-04	14.18	14.20	14.26	14.27	14.29	14.09	14.13	13.56	13.56	13.44	13.43
B-02-BC-02	B-05-BC-02	O-02	O-05	13.71	13.71	13.79	13.80	13.79	13.61	13.65	13.10	13.11	13.01	12.98
B-02-BC-02	B-06-BC-02	O-02	O-06	13.63	13.66	13.74	13.75	13.75	13.56	13.60	13.06	13.06	12.96	12.93
B-02-BC-02	B-07-BC1-04	O-02	O-07	12.44	12.45	12.52	12.52	12.53	12.36	12.40	12.00	11.99	11.90	11.89
B-03-BC1-04	B-04-BC-02	O-03	O-04	12.58	12.60	12.63	12.68	12.69	12.52	12.56	12.16	12.21	12.07	12.05
B-03-BC1-04	B-05-BC-02	O-03	O-05	12.97	12.98	13.02	13.06	13.06	12.89	12.90	12.45	12.54	12.37	12.33
B-03-BC1-04	B-06-BC-02	O-03	O-06	14.07	14.11	14.19	14.20	14.21	13.98	14.03	13.47	13.48	13.35	13.36
B-03-BC1-04	B-07-BC1-04	O-03	O-07	13.20	13.23	13.28	13.29	13.31	13.10	13.13	12.61	12.62	12.50	12.51
B-04-BC-02	B-05-BC-02	O-04	O-05	11.14	11.11	11.15	11.16	11.16	11.10	11.12	10.95	10.95	10.93	10.92
B-04-BC-02	B-06-BC-02	O-04	O-06	12.18	12.18	12.23	12.26	12.27	12.11	12.13	11.74	11.73	11.66	11.67
B-04-BC-02	B-07-BC1-04	O-04	O-07	12.64	12.69	12.73	12.75	12.77	12.56	12.58	12.13	12.12	12.03	12.03
B-05-BC-02	B-06-BC-02	O-05	O-06	10.25	10.27	10.30	10.31	10.32	10.21	10.25	10.00	9.99	9.96	9.94
B-05-BC-02	B-07-BC1-04	O-05	O-07	10.72	10.72	10.77	10.78	10.80	10.65	10.68	10.32	10.31	10.25	10.22
B-06-BC-02	B-07-BC1-04	O-06	O-07	10.79	10.81	10.85	10.83	10.84	10.77	10.80	10.62	10.61	10.59	10.58

Notes

 $\Omega\text{-m}$ = ohm-meters

LBFU = Lower Basin Fill Unit

Oxide = Bedrock Oxide Unit

Horizon 2 Alert Level = 10.12 $\Omega\text{-m}$

Alert Level Exceedance

TABLE 2

BULK ELECTRICAL CONDUCTIVITY MONITORING RESULTS

HORIZON 2 (20 FEET ABOVE LBFU/OXIDE CONTACT)

FLORENCE COPPER PROJECT

FLORENCE, ARIZONA

Electrode 1	Electrode 2	Sending Well	Receiving Well	Apparent Resistivity ($\Omega\text{-m}$)									
				12/5/2019	12/11/2019	12/19/2019	12/20/2019	12/21/2019	12/23/2019	12/26/2019	12/28/2019	12/30/2019	12/31/2019
B-01-BC-02	B-02-BC-02	O-01	O-02	14.25	14.31	14.28	14.30	14.31	14.29	14.25	14.23	14.26	14.25
B-01-BC-02	B-03-BC1-04	O-01	O-03	10.90	10.98	10.98	11.02	11.03	11.00	10.87	10.86	10.90	10.91
B-01-BC-02	B-04-BC-02	O-01	O-04	12.66	12.79	12.74	12.80	12.83	12.78	12.61	12.60	12.65	12.65
B-01-BC-02	B-05-BC-02	O-01	O-05	11.65	11.76	11.73	11.78	11.80	11.76	11.61	11.59	11.64	11.64
B-01-BC-02	B-06-BC-02	O-01	O-06	11.20	11.30	11.28	11.31	11.32	11.30	11.16	11.15	11.20	11.20
B-01-BC-02	B-07-BC1-04	O-01	O-07	11.47	11.53	11.52	11.54	11.55	11.53	11.44	11.44	11.47	11.47
B-02-BC-02	B-03-BC1-04	O-02	O-03	10.70	10.74	10.76	10.78	10.80	10.78	10.67	10.67	10.70	10.69
B-02-BC-02	B-04-BC-02	O-02	O-04	13.42	13.55	13.51	13.56	13.59	13.55	13.36	13.34	13.40	13.40
B-02-BC-02	B-05-BC-02	O-02	O-05	12.97	13.09	13.04	13.10	13.12	13.08	12.90	12.89	12.95	12.95
B-02-BC-02	B-06-BC-02	O-02	O-06	12.92	13.03	13.01	13.04	13.07	13.03	12.86	12.84	12.90	12.90
B-02-BC-02	B-07-BC1-04	O-02	O-07	11.88	11.97	11.95	11.98	12.00	11.98	11.85	11.82	11.87	11.87
B-03-BC1-04	B-04-BC-02	O-03	O-04	12.06	12.12	12.11	12.15	12.17	12.15	12.01	12.00	12.02	12.03
B-03-BC1-04	B-05-BC-02	O-03	O-05	12.33	12.41	12.40	12.44	12.46	12.43	12.28	12.26	12.32	12.30
B-03-BC1-04	B-06-BC-02	O-03	O-06	13.34	13.43	13.42	13.46	13.47	13.45	13.27	13.24	13.30	13.30
B-03-BC1-04	B-07-BC1-04	O-03	O-07	12.50	12.57	12.59	12.62	12.64	12.60	12.44	12.41	12.47	12.46
B-04-BC-02	B-05-BC-02	O-04	O-05	10.91	10.94	10.92	10.95	10.95	10.93	10.89	10.89	10.90	10.90
B-04-BC-02	B-06-BC-02	O-04	O-06	11.65	11.74	11.71	11.74	11.76	11.73	11.60	11.60	11.63	11.62
B-04-BC-02	B-07-BC1-04	O-04	O-07	12.02	12.12	12.08	12.13	12.19	12.12	11.96	11.94	12.00	12.00
B-05-BC-02	B-06-BC-02	O-05	O-06	9.94	9.99	9.96	9.99	10.00	9.98	9.90	9.89	9.93	9.93
B-05-BC-02	B-07-BC1-04	O-05	O-07	10.22	10.31	10.29	10.31	10.32	10.30	10.19	10.18	10.21	10.22
B-06-BC-02	B-07-BC1-04	O-06	O-07	10.58	10.62	10.60	10.62	10.62	10.61	10.55	10.54	10.57	10.57

Notes

 $\Omega\text{-m}$ = ohm-meters

LBFU = Lower Basin Fill Unit

Oxide = Bedrock Oxide Unit

Horizon 2 Alert Level = 10.12 $\Omega\text{-m}$

Alert Level Exceedance

TABLE 3
BULK ELECTRICAL CONDUCTIVITY MONITORING RESULTS
HORIZON 3 (AT LBFU/OXIDE CONTACT)
FLORENCE COPPER PROJECT
FLORENCE, ARIZONA

Electrode 1	Electrode 2	Sending Well	Receiving Well	Apparent Resistivity ($\Omega\text{-m}$)										
				10/4/2019	10/11/2019	10/18/2019	10/24/2019	11/1/2019	11/8/2019	11/14/2019	11/21/2019	11/26/2019	12/3/2019	12/4/2019
B-01-BC-03	B-02-BC-03	O-01	O-02	15.39	15.42	15.44	15.43	15.43	15.33	15.36	15.17	15.15	15.13	15.10
B-01-BC-03	B-03-BC2-02	O-01	O-03	11.55	11.57	11.60	11.62	11.64	11.50	11.53	11.13	10.75	11.03	10.99
B-01-BC-03	B-04-BC-03	O-01	O-04	13.30	13.33	13.37	13.40	13.42	13.24	13.30	12.78	12.79	12.67	12.62
B-01-BC-03	B-05-BC-03	O-01	O-05	12.20	12.23	12.27	12.29	12.30	12.16	12.19	11.73	11.74	11.62	11.59
B-01-BC-03	B-06-BC-03	O-01	O-06	11.60	11.62	11.66	11.68	11.68	11.57	11.59	11.20	11.21	11.12	11.08
B-01-BC-03	B-07-BC2-02	O-01	O-07	12.06	12.06	12.10	12.11	12.10	12.02	12.05	11.79	11.80	11.74	11.72
B-02-BC-03	B-03-BC2-02	O-02	O-03	11.42	11.43	11.45	11.47	11.47	11.34	11.37	11.08	10.46	11.08	11.07
B-02-BC-03	B-04-BC-03	O-02	O-04	14.04	14.04	14.09	14.13	14.15	13.97	13.97	13.46	13.44	13.34	13.32
B-02-BC-03	B-05-BC-03	O-02	O-05	13.54	13.57	13.63	13.65	13.65	13.48	13.49	12.98	12.99	12.87	12.86
B-02-BC-03	B-06-BC-03	O-02	O-06	13.52	13.53	13.60	13.62	13.61	13.45	13.48	12.94	12.95	12.85	12.81
B-02-BC-03	B-07-BC2-02	O-02	O-07	12.53	12.52	12.60	12.59	12.60	12.46	12.49	12.09	12.08	12.00	11.99
B-03-BC2-02	B-04-BC-03	O-03	O-04	12.51	12.52	12.57	12.59	12.60	12.47	12.50	12.10	11.80	12.02	12.01
B-03-BC2-02	B-05-BC-03	O-03	O-05	12.98	12.99	13.04	13.07	13.07	12.91	12.95	12.48	12.36	12.34	12.33
B-03-BC2-02	B-06-BC-03	O-03	O-06	14.18	14.21	14.27	14.31	14.31	14.09	14.14	13.58	13.51	13.40	13.39
B-03-BC2-02	B-07-BC2-02	O-03	O-07	13.22	13.24	13.30	13.34	13.33	13.15	13.18	12.66	12.58	12.48	12.49
B-04-BC-03	B-05-BC-03	O-04	O-05	11.80	11.81	11.82	11.85	11.86	11.81	11.84	11.67	11.65	11.62	11.62
B-04-BC-03	B-06-BC-03	O-04	O-06	12.27	12.27	12.32	12.36	12.36	12.21	12.25	11.86	11.86	11.77	11.77
B-04-BC-03	B-07-BC2-02	O-04	O-07	12.51	12.53	12.57	12.61	12.62	12.47	12.50	12.02	12.04	11.94	11.94
B-05-BC-03	B-06-BC-03	O-05	O-06	10.52	10.52	10.56	10.57	10.59	10.48	10.52	10.28	10.28	10.23	10.22
B-05-BC-03	B-07-BC2-02	O-05	O-07	10.58	10.58	10.64	10.64	10.66	10.53	10.56	10.20	10.20	10.13	10.13
B-06-BC-03	B-07-BC2-02	O-06	O-07	11.02	11.02	11.06	11.04	11.05	10.99	11.00	10.83	10.83	10.81	10.81

Notes

$\Omega\text{-m}$ = ohm-meters

LBFU = Lower Basin Fill Unit

Oxide = Bedrock Oxide Unit

Horizon 3 Alert Level = 10.33 $\Omega\text{-m}$

Alert Level Exceedance

TABLE 3
BULK ELECTRICAL CONDUCTIVITY MONITORING RESULTS
HORIZON 3 (AT LBFU/OXIDE CONTACT)
FLORENCE COPPER PROJECT
FLORENCE, ARIZONA

Electrode 1	Electrode 2	Sending Well	Receiving Well	Apparent Resistivity ($\Omega\text{-m}$)									
				12/5/2019	12/11/2019	12/19/2019	12/20/2019	12/21/2019	12/23/2019	12/26/2019	12/28/2019	12/30/2019	12/31/2019
B-01-BC-03	B-02-BC-03	O-01	O-02	15.11	15.17	15.12	15.15	15.16	15.15	15.11	15.11	15.12	15.10
B-01-BC-03	B-03-BC2-02	O-01	O-03	10.98	10.87	11.07	11.12	11.15	11.12	10.99	10.97	11.01	11.01
B-01-BC-03	B-04-BC-03	O-01	O-04	12.60	12.76	12.73	12.77	12.80	12.77	12.57	12.56	12.63	12.61
B-01-BC-03	B-05-BC-03	O-01	O-05	11.58	11.69	11.67	11.71	11.74	11.71	11.54	11.53	11.59	11.57
B-01-BC-03	B-06-BC-03	O-01	O-06	11.06	11.16	11.16	11.19	11.20	11.18	11.04	11.03	11.08	11.07
B-01-BC-03	B-07-BC2-02	O-01	O-07	11.73	11.77	11.78	11.80	11.81	11.79	11.71	11.71	11.73	11.73
B-02-BC-03	B-03-BC2-02	O-02	O-03	11.06	10.60	11.10	11.14	10.95	11.03	10.88	10.88	10.92	10.91
B-02-BC-03	B-04-BC-03	O-02	O-04	13.31	13.43	13.40	13.45	13.48	13.44	13.28	13.25	13.30	13.29
B-02-BC-03	B-05-BC-03	O-02	O-05	12.85	12.96	12.94	12.98	13.01	12.99	12.81	12.78	12.84	12.83
B-02-BC-03	B-06-BC-03	O-02	O-06	12.80	12.91	12.91	12.94	12.96	12.92	12.76	12.74	12.78	12.79
B-02-BC-03	B-07-BC2-02	O-02	O-07	11.98	12.06	12.05	12.08	12.10	12.07	11.95	11.93	11.98	11.97
B-03-BC2-02	B-04-BC-03	O-03	O-04	12.00	11.67	12.07	12.05	12.11	12.09	11.95	11.94	11.97	11.96
B-03-BC2-02	B-05-BC-03	O-03	O-05	12.32	12.10	12.40	12.44	12.58	12.46	12.37	12.34	12.39	12.38
B-03-BC2-02	B-06-BC-03	O-03	O-06	13.37	13.09	13.43	13.49	13.75	13.56	13.46	13.44	13.51	13.49
B-03-BC2-02	B-07-BC2-02	O-03	O-07	12.48	12.21	12.58	12.59	12.81	12.59	12.59	12.53	12.59	12.56
B-04-BC-03	B-05-BC-03	O-04	O-05	11.61	11.65	11.62	11.65	11.66	11.64	11.59	11.58	11.61	11.60
B-04-BC-03	B-06-BC-03	O-04	O-06	11.76	11.85	11.81	11.85	11.86	11.84	11.71	11.71	11.75	11.74
B-04-BC-03	B-07-BC2-02	O-04	O-07	11.93	12.02	11.92	12.03	12.06	12.02	11.86	11.84	11.90	11.90
B-05-BC-03	B-06-BC-03	O-05	O-06	10.21	10.26	10.26	10.25	10.28	10.27	10.18	10.17	10.20	10.20
B-05-BC-03	B-07-BC2-02	O-05	O-07	10.10	10.18	10.18	10.18	10.20	10.18	10.07	10.07	10.11	10.10
B-06-BC-03	B-07-BC2-02	O-06	O-07	10.79	10.82	10.80	10.83	10.84	10.82	10.76	10.77	10.78	10.78

Notes

$\Omega\text{-m}$ = ohm-meters

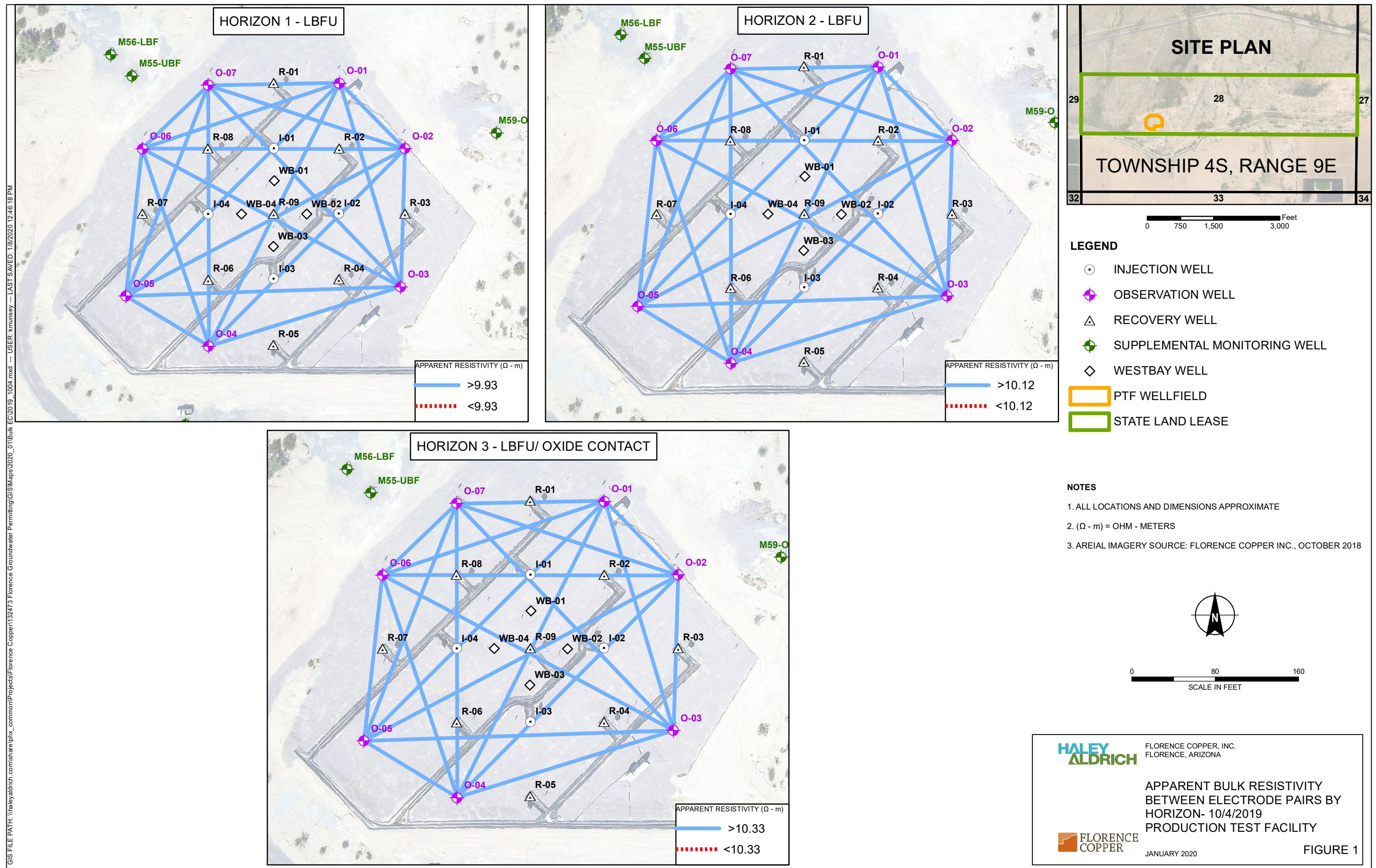
LBFU = Lower Basin Fill Unit

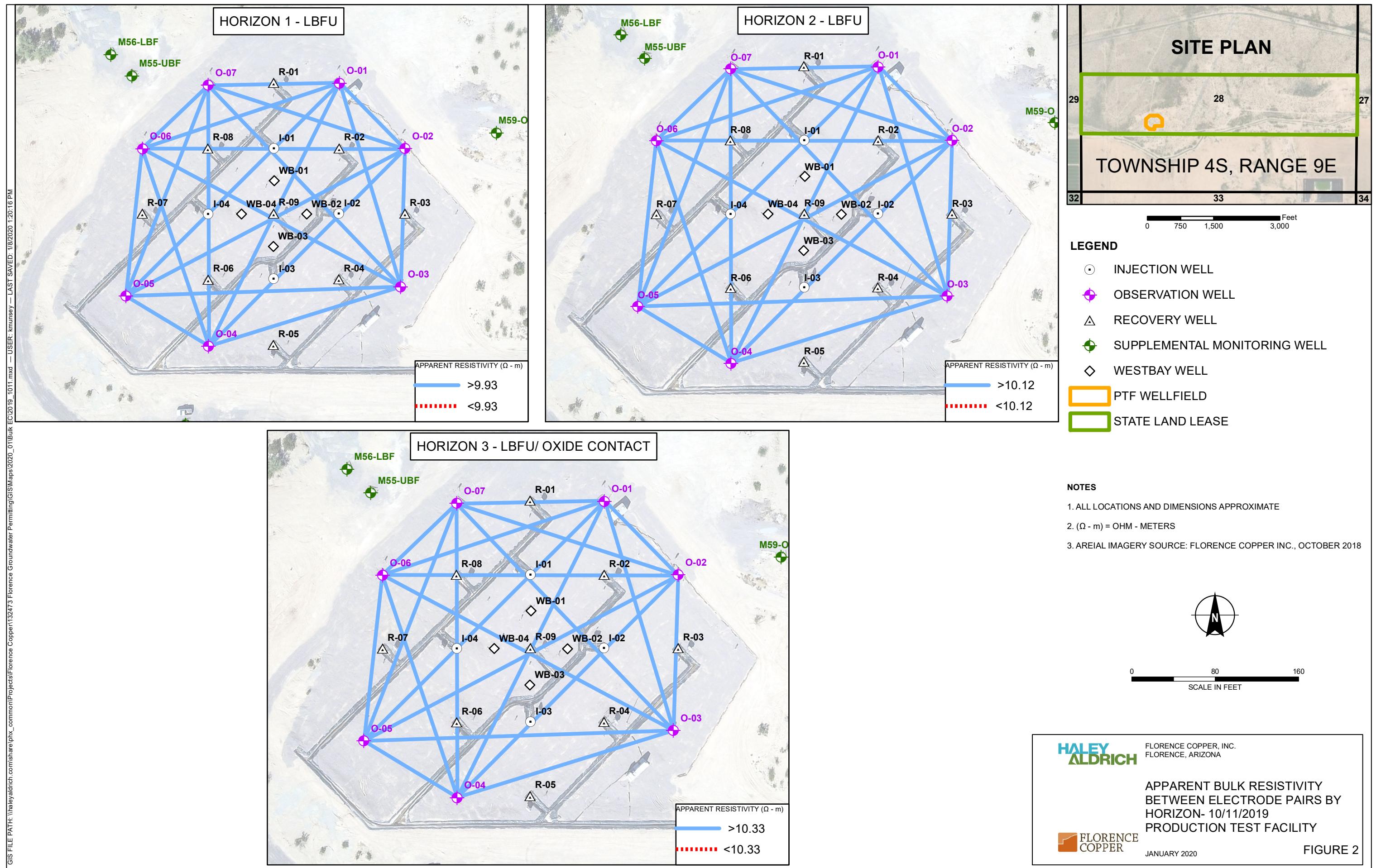
Oxide = Bedrock Oxide Unit

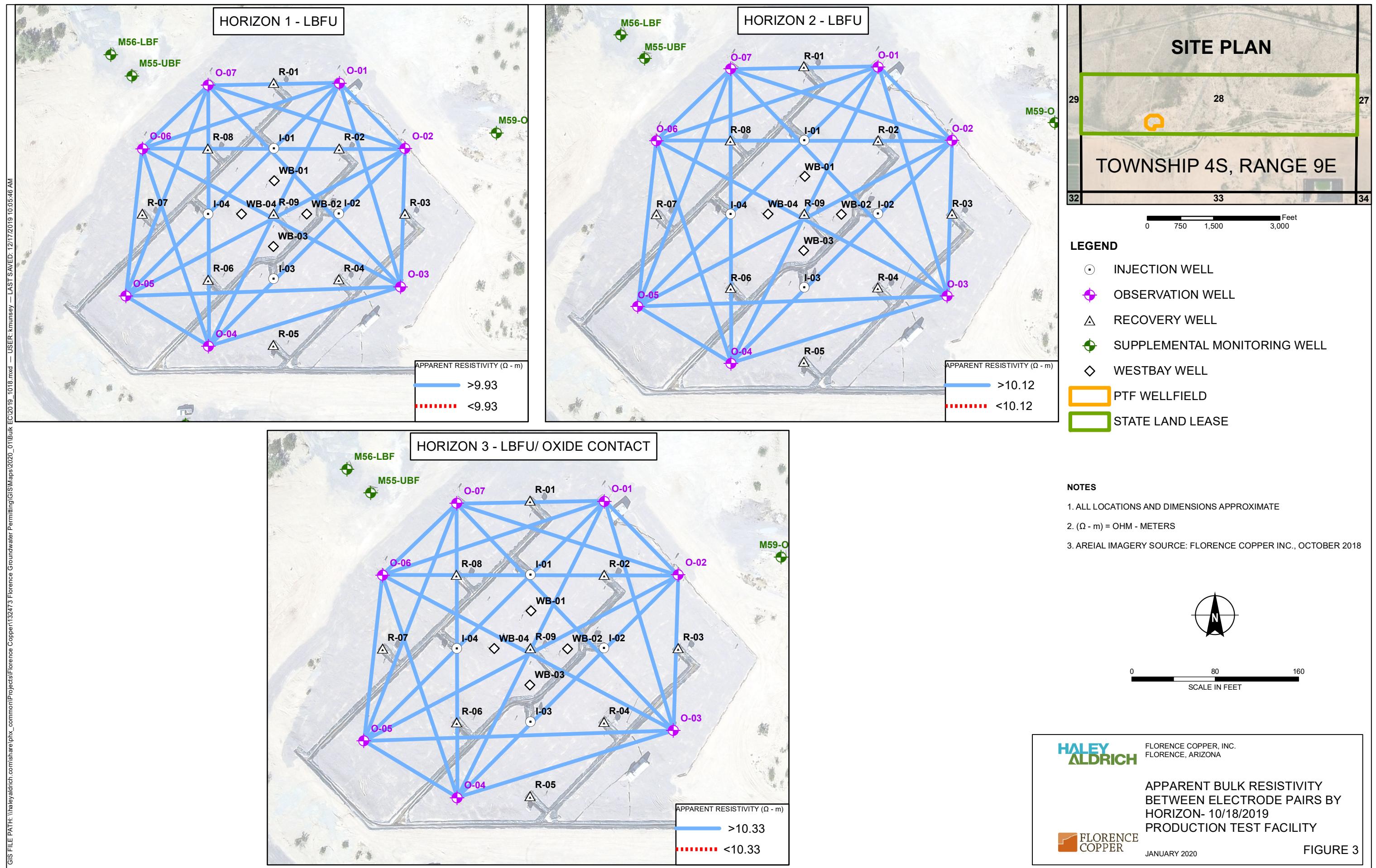
Horizon 3 Alert Level = 10.33 $\Omega\text{-m}$

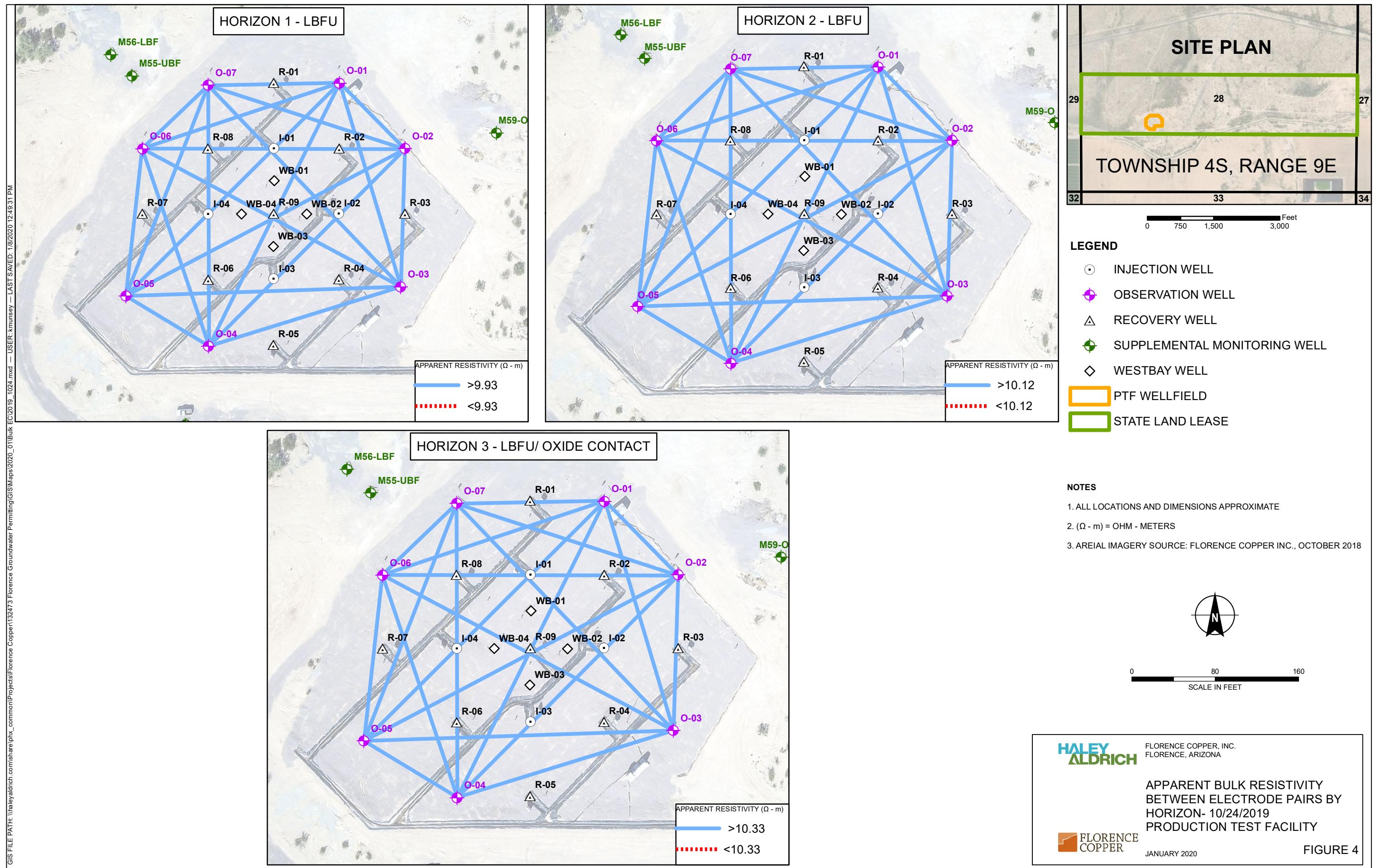
Alert Level Exceedance

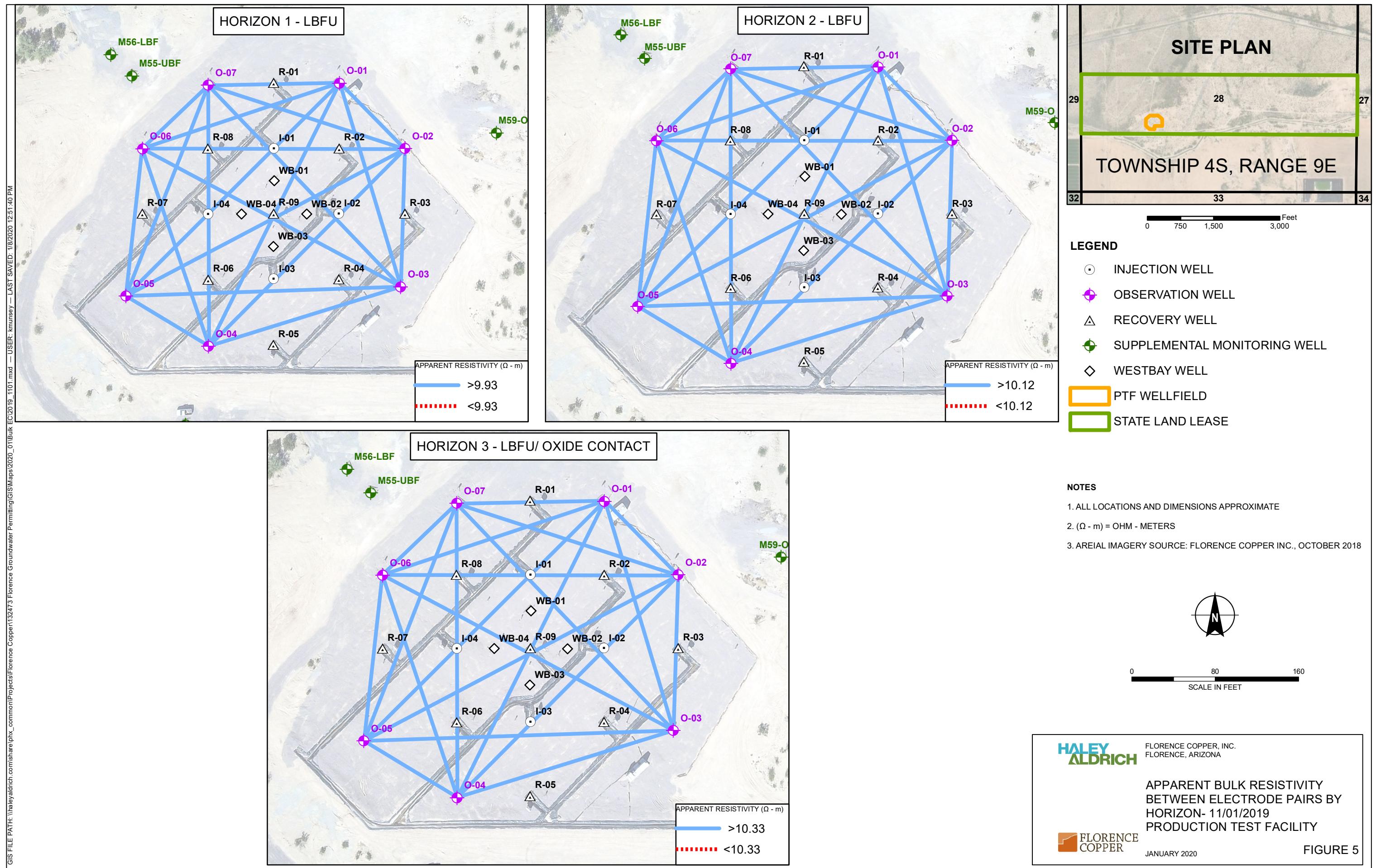
FIGURES

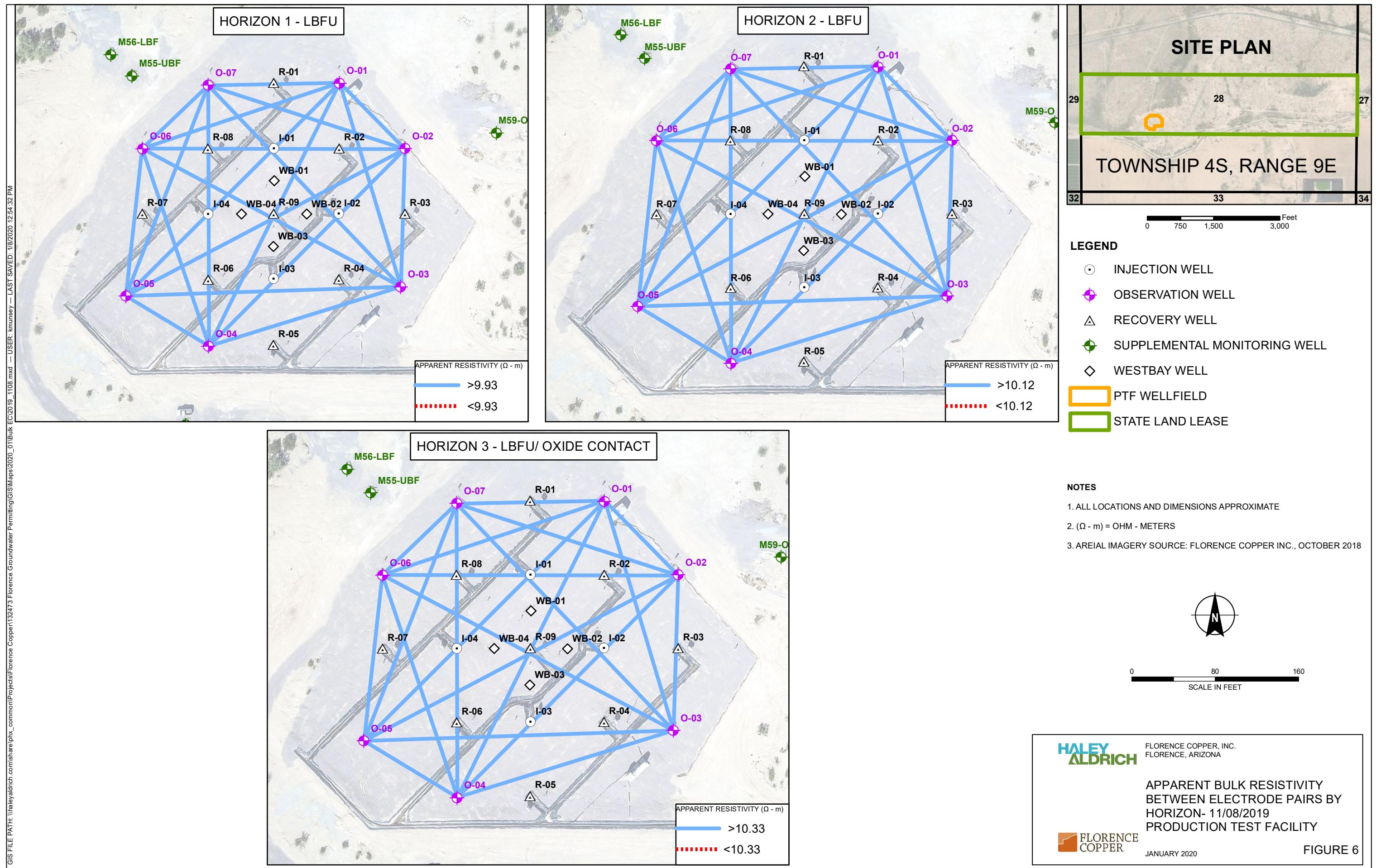


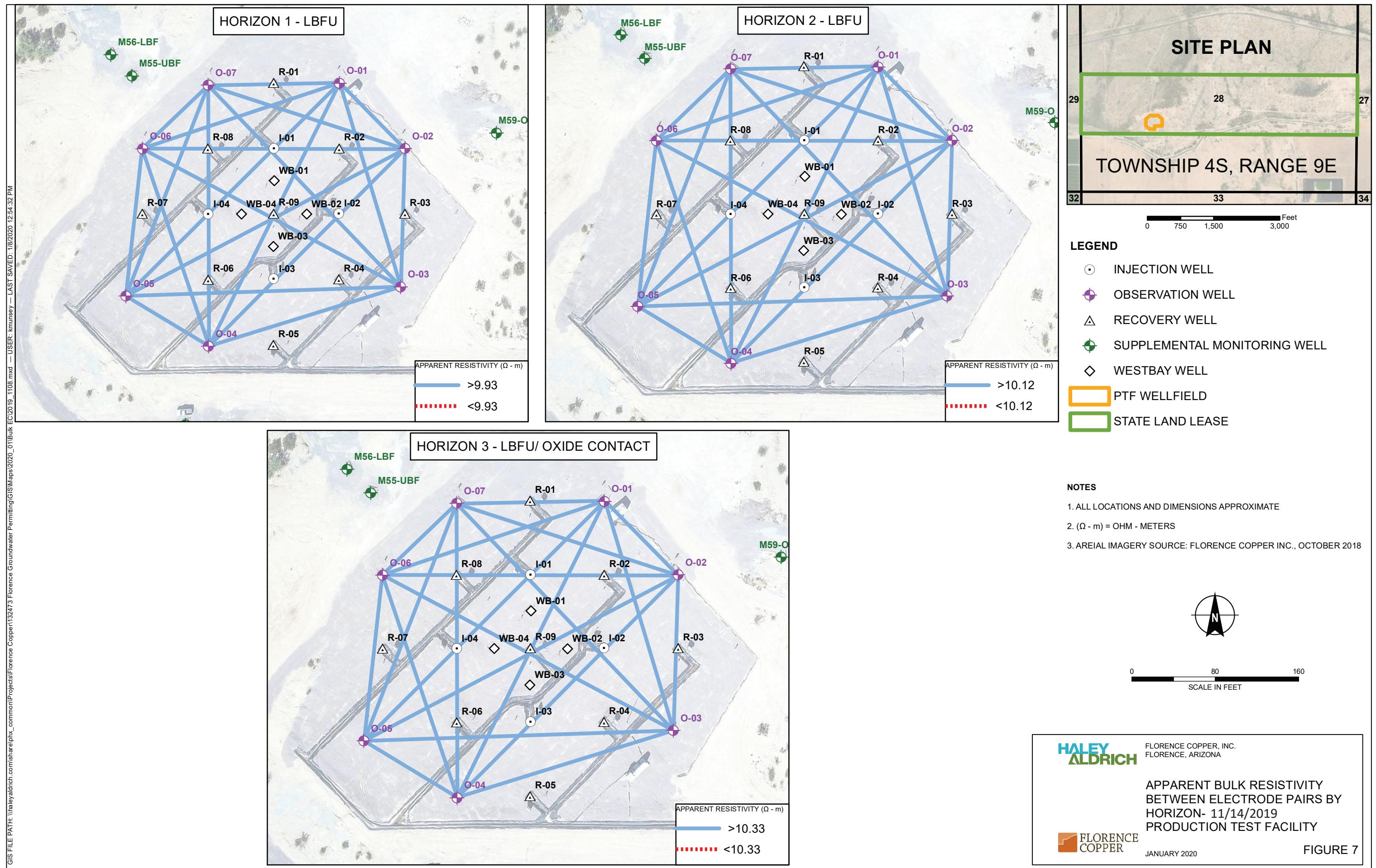


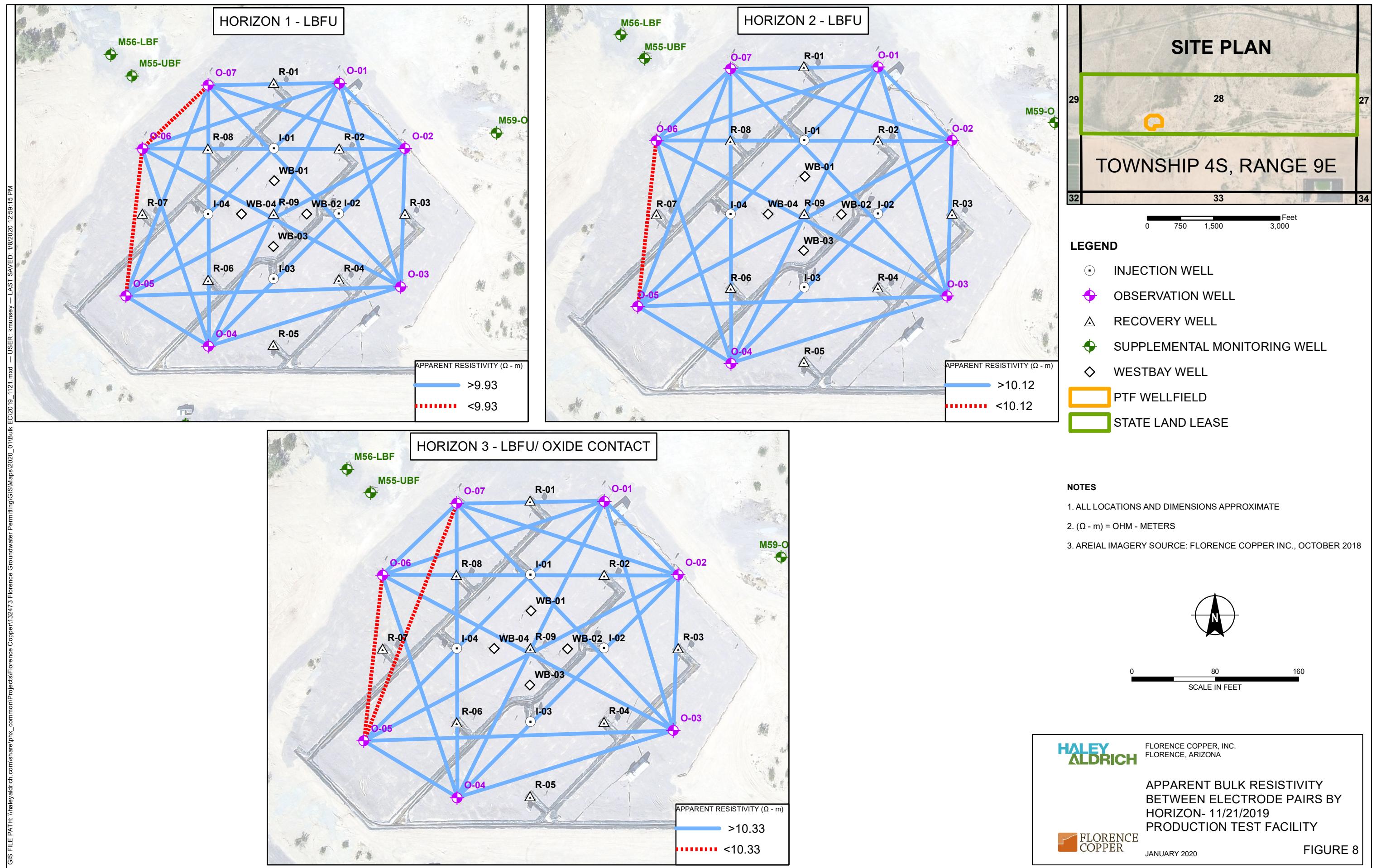


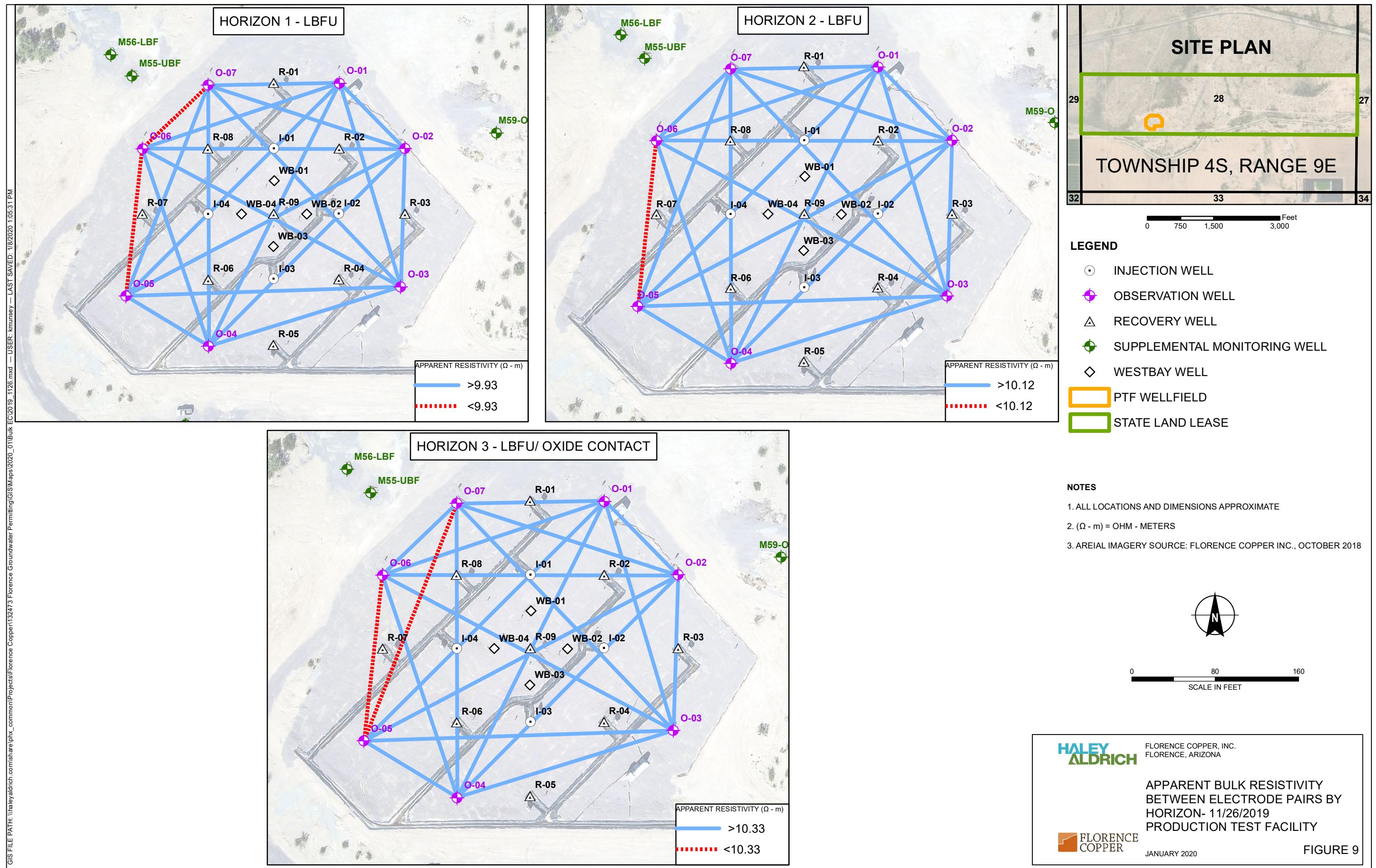


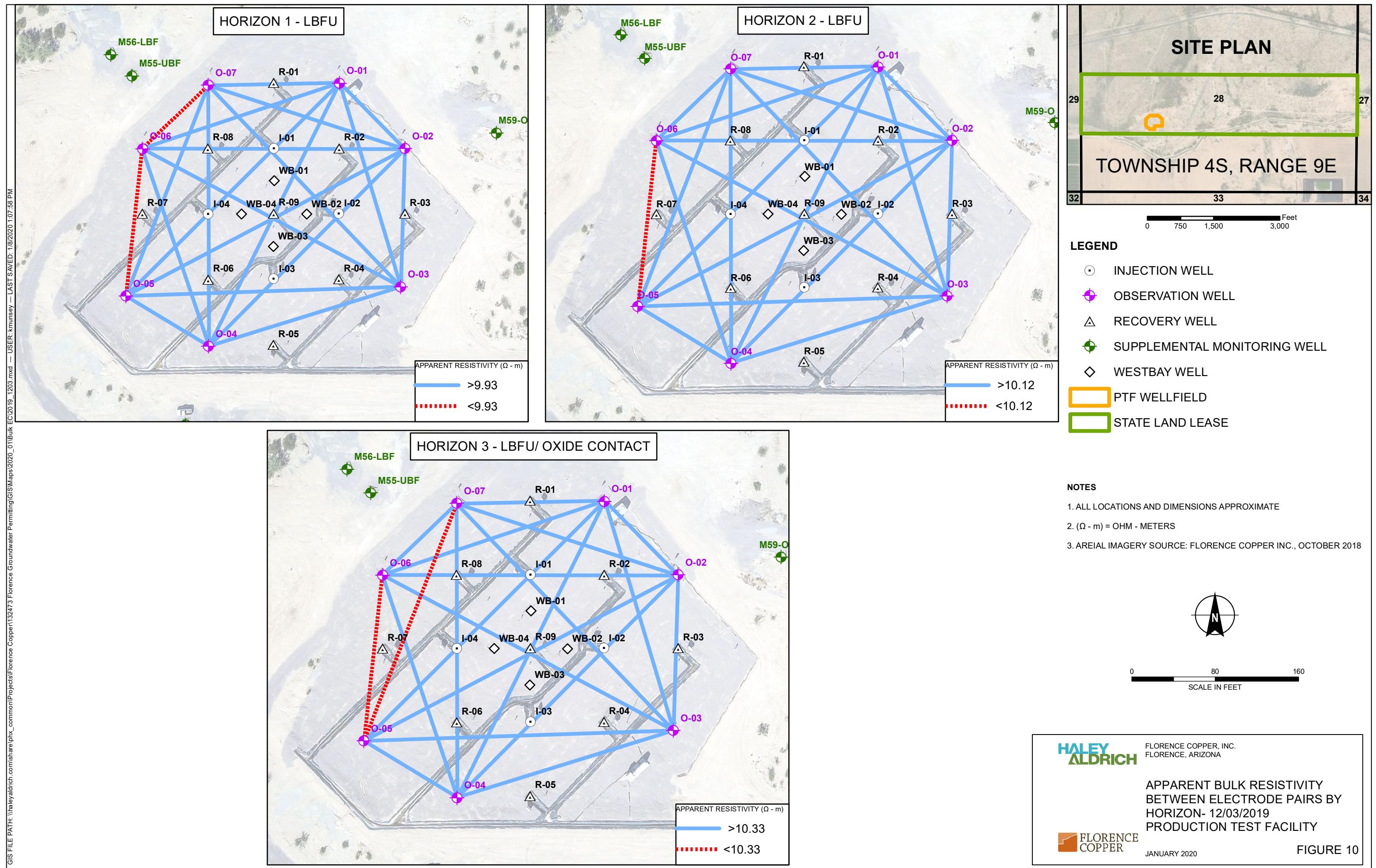


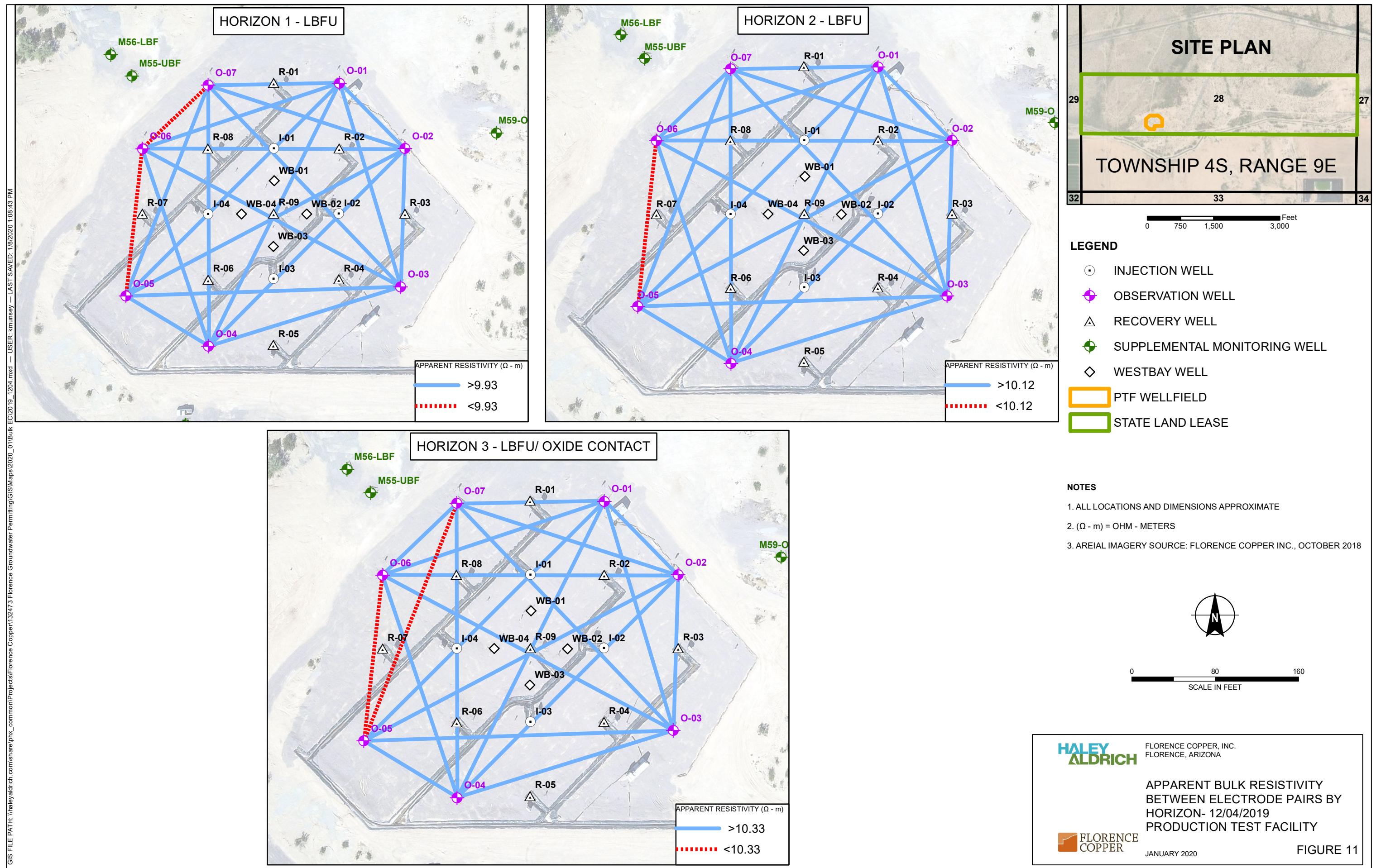


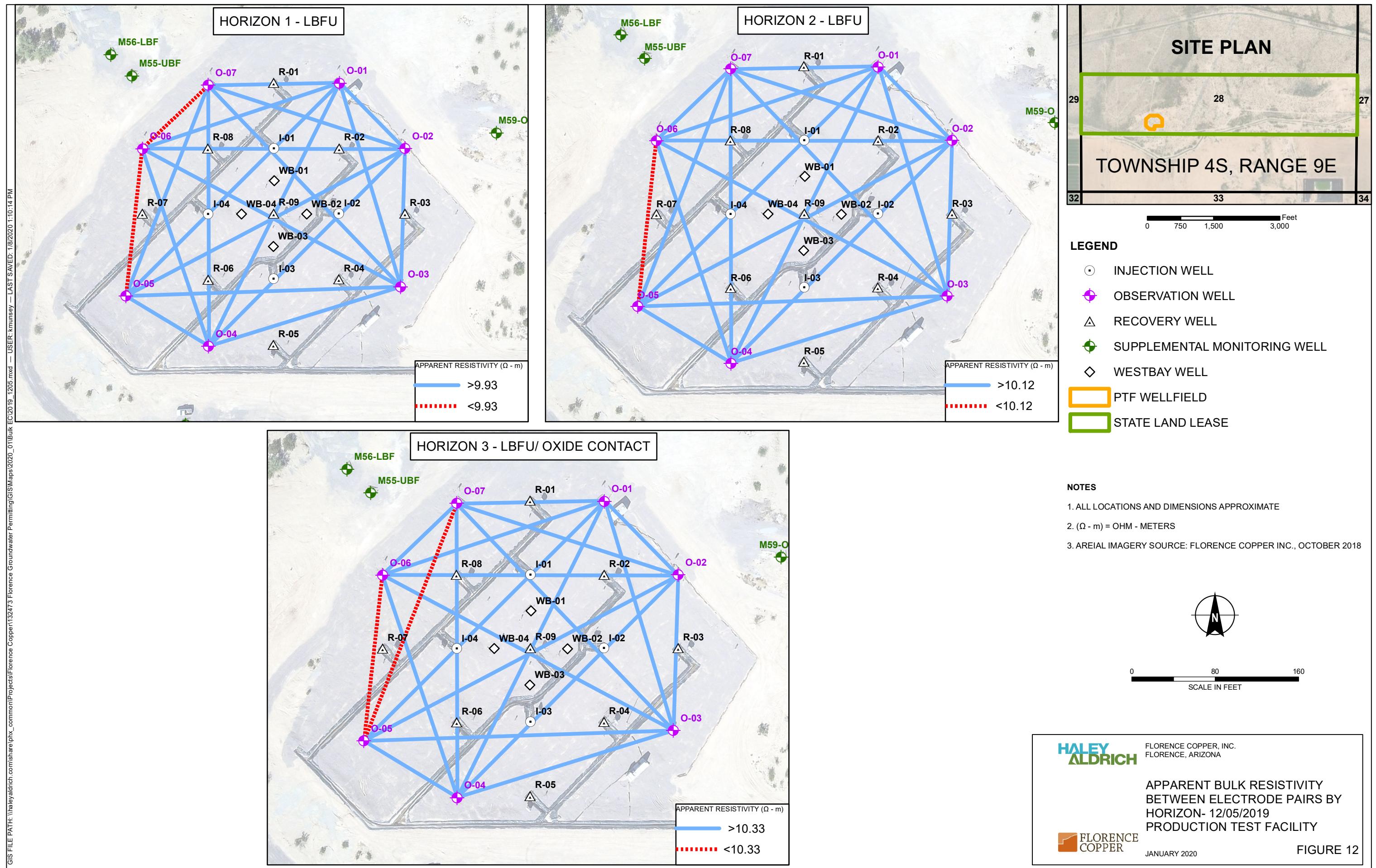


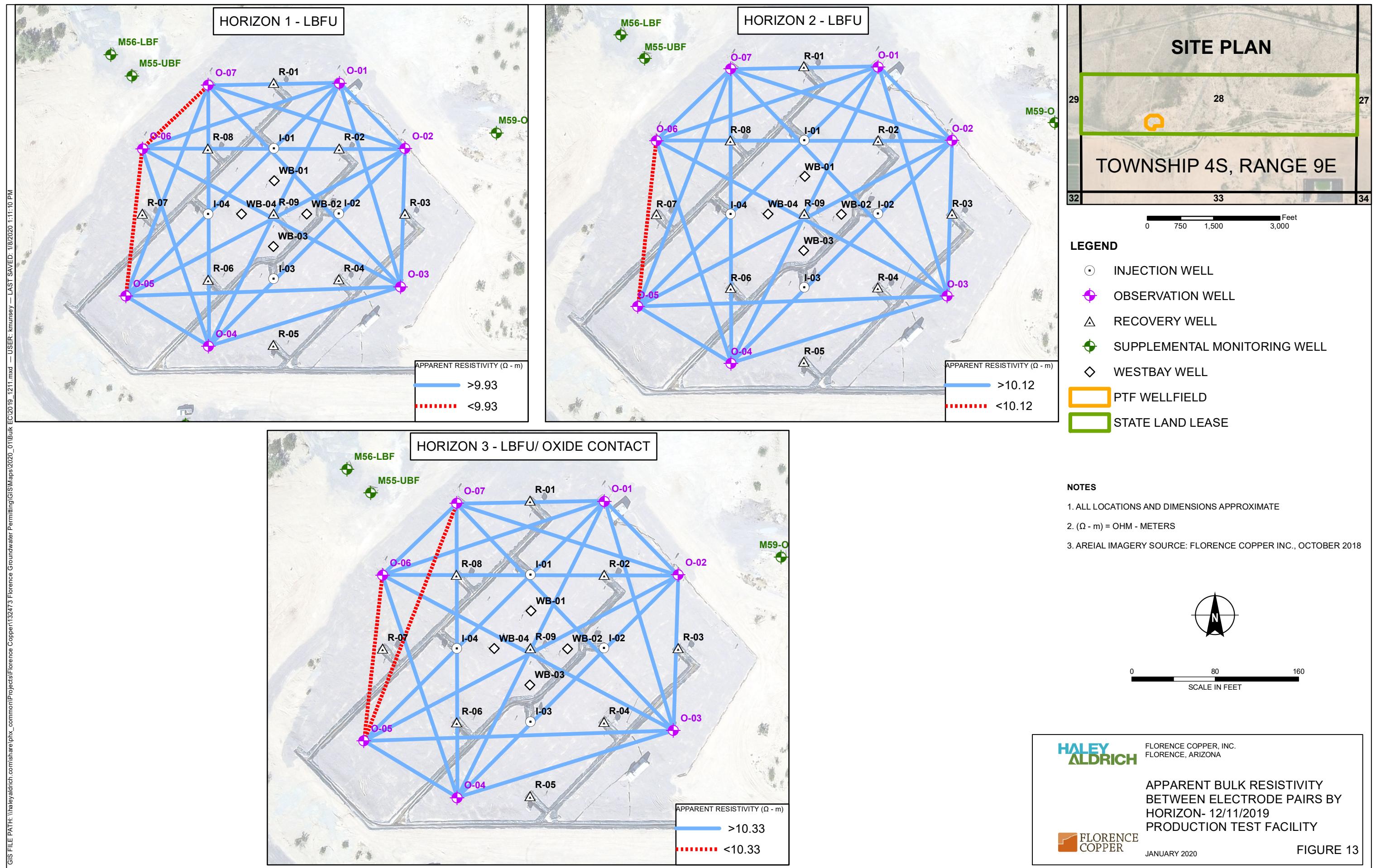


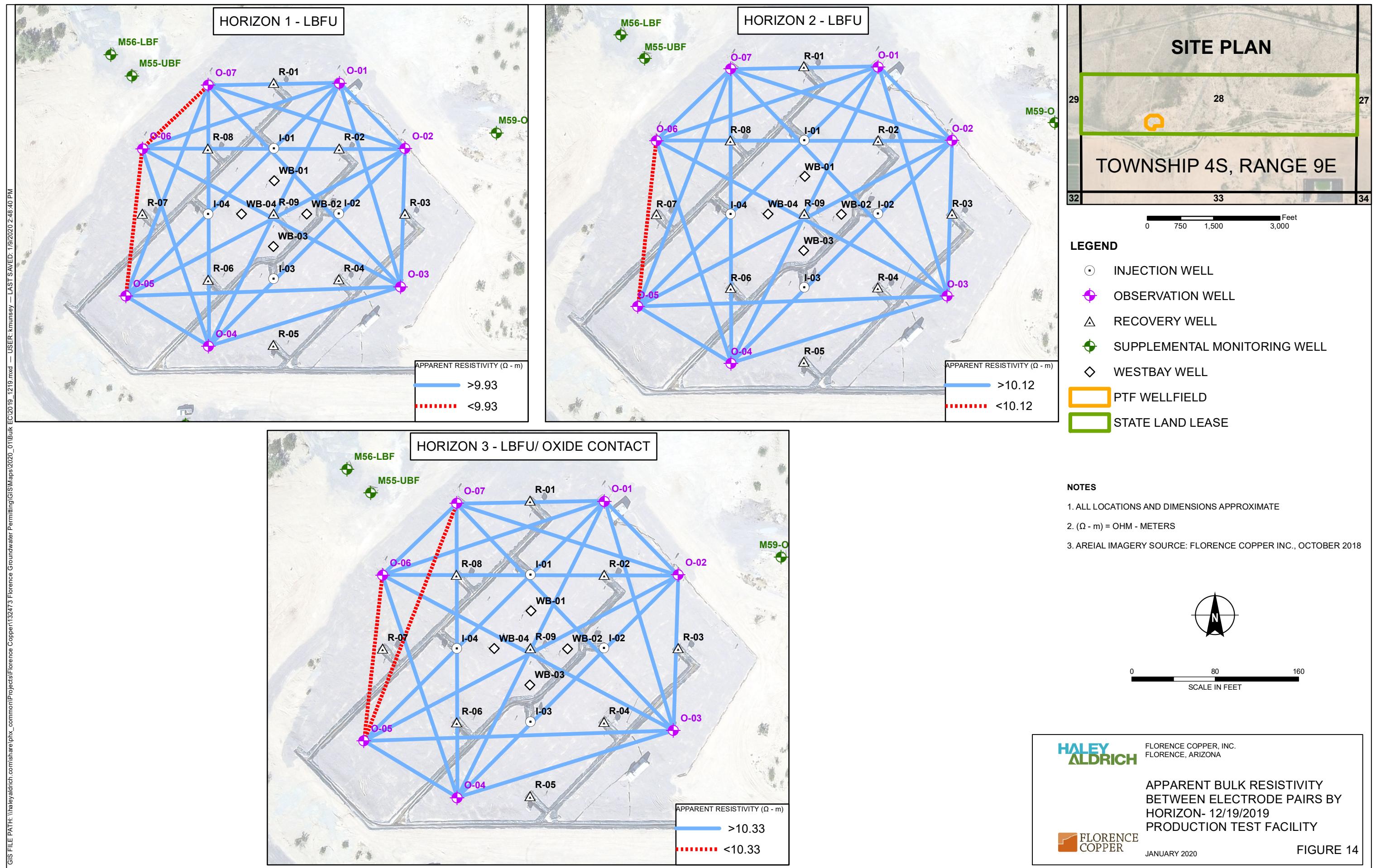


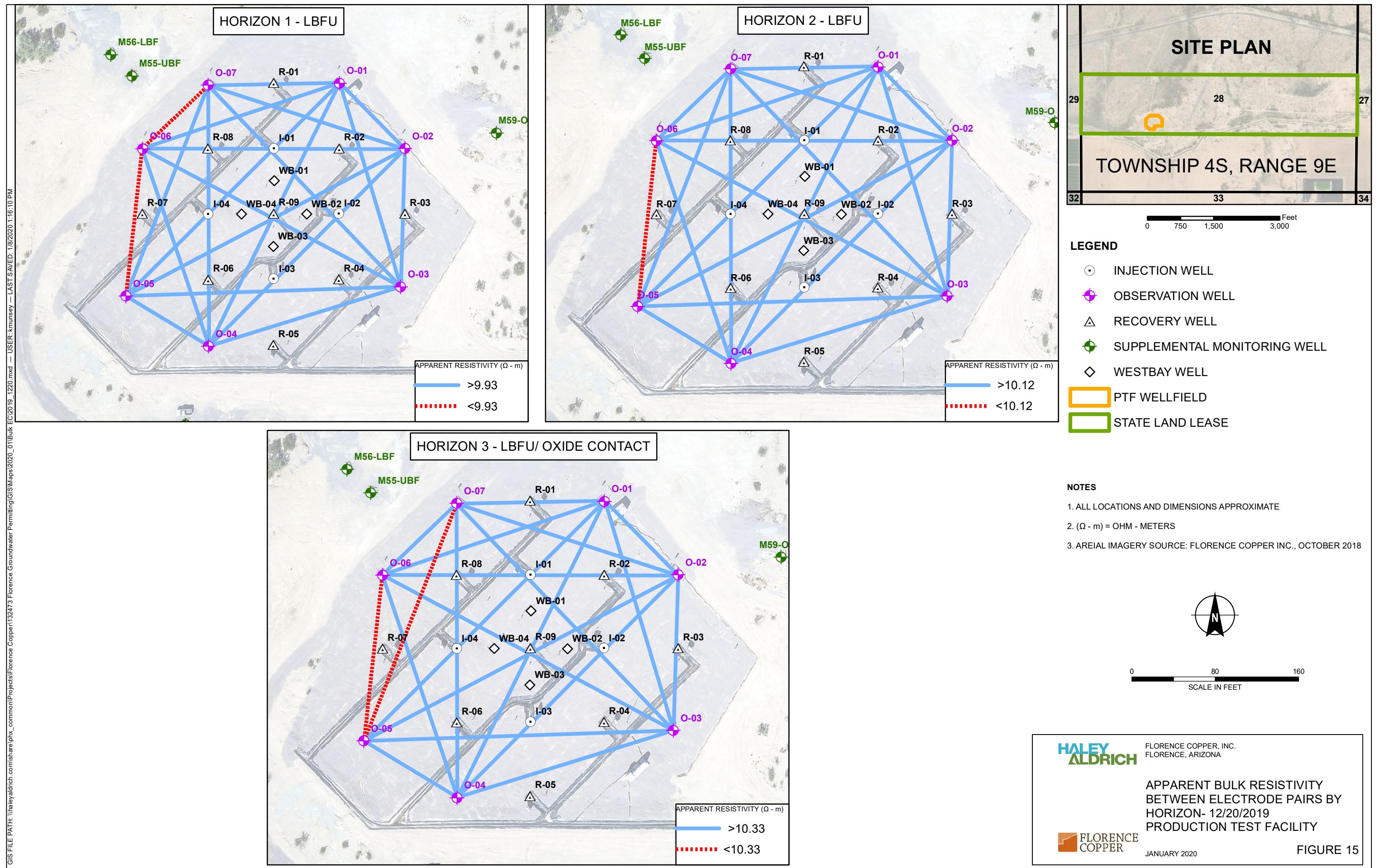


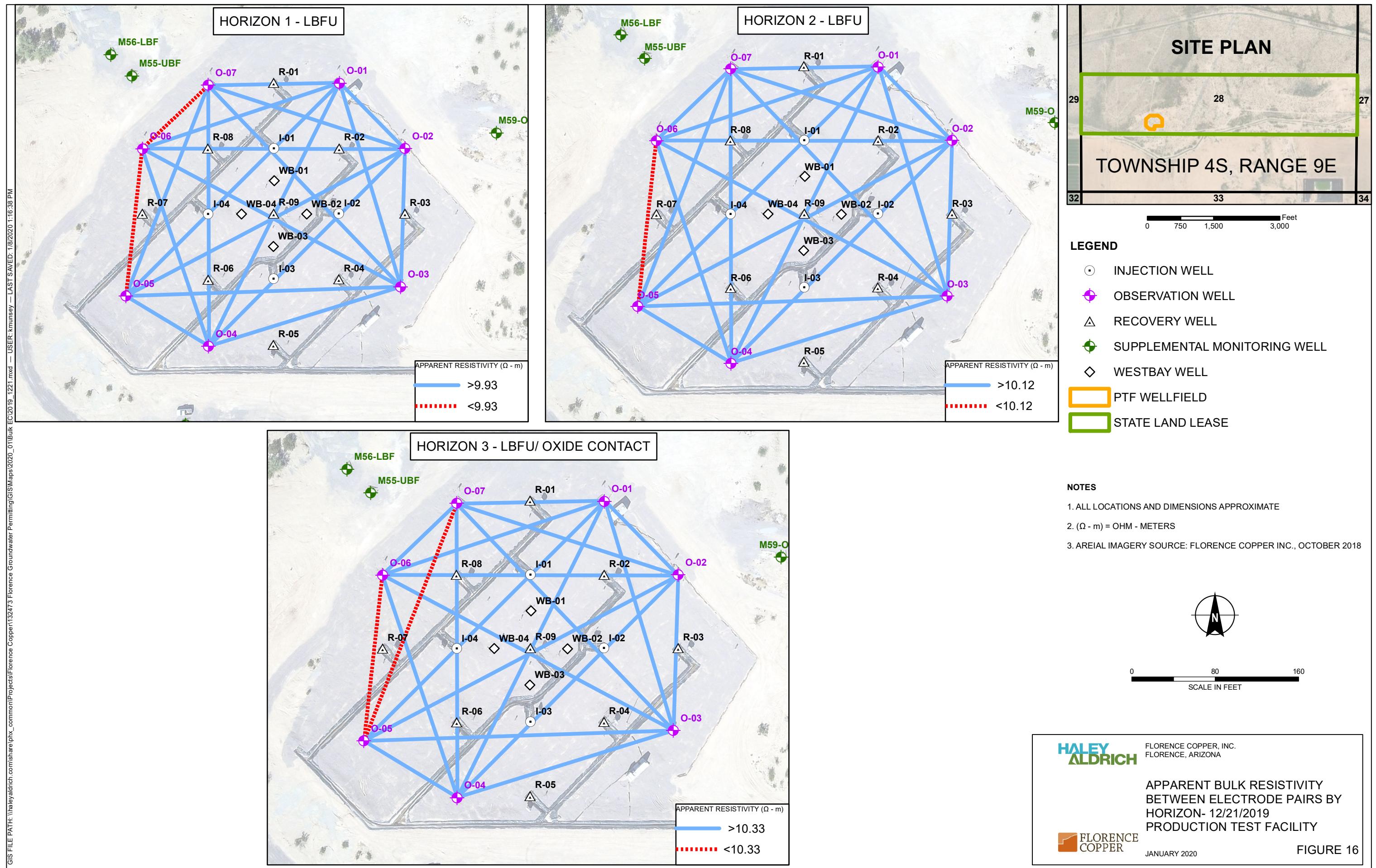


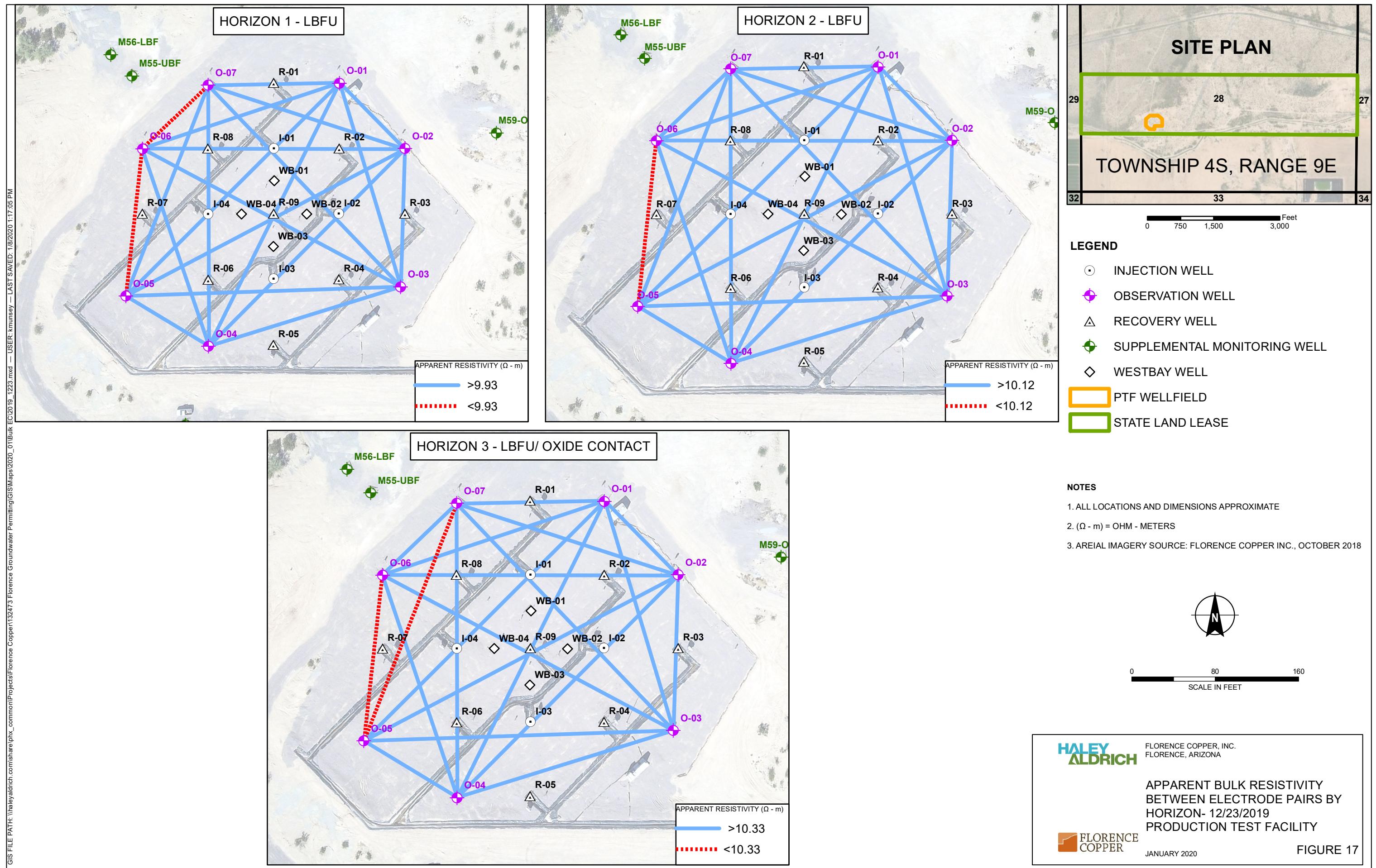


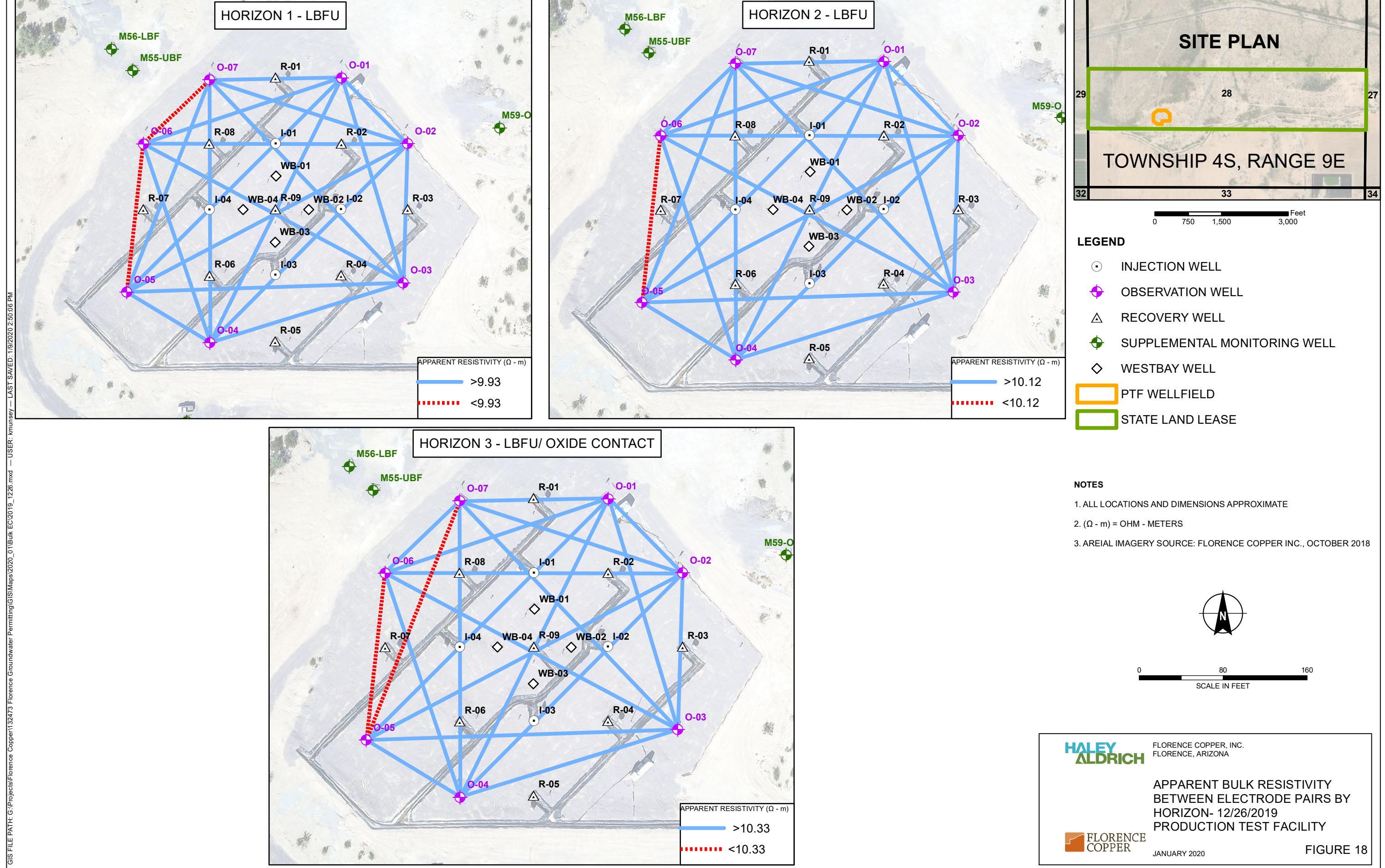


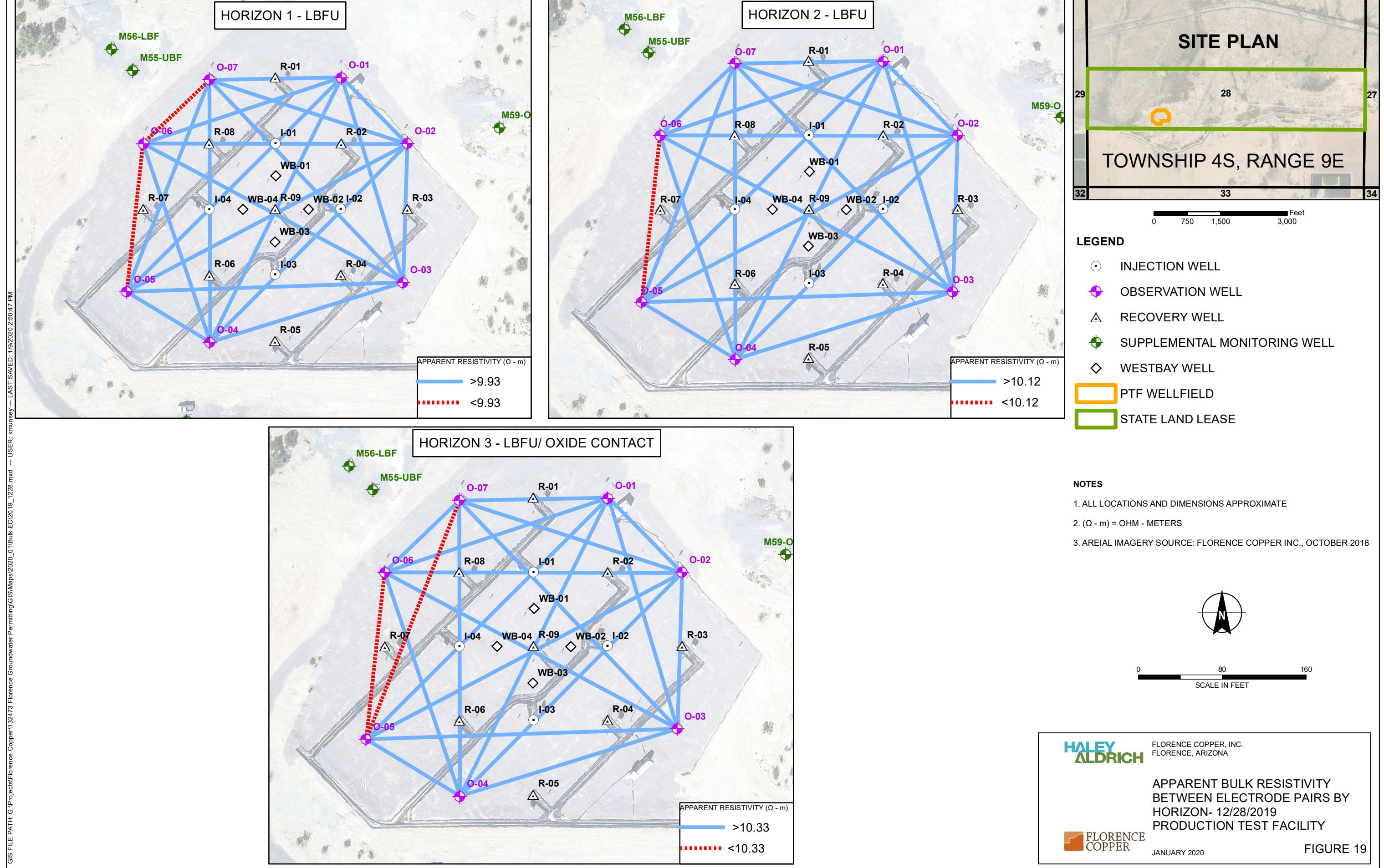


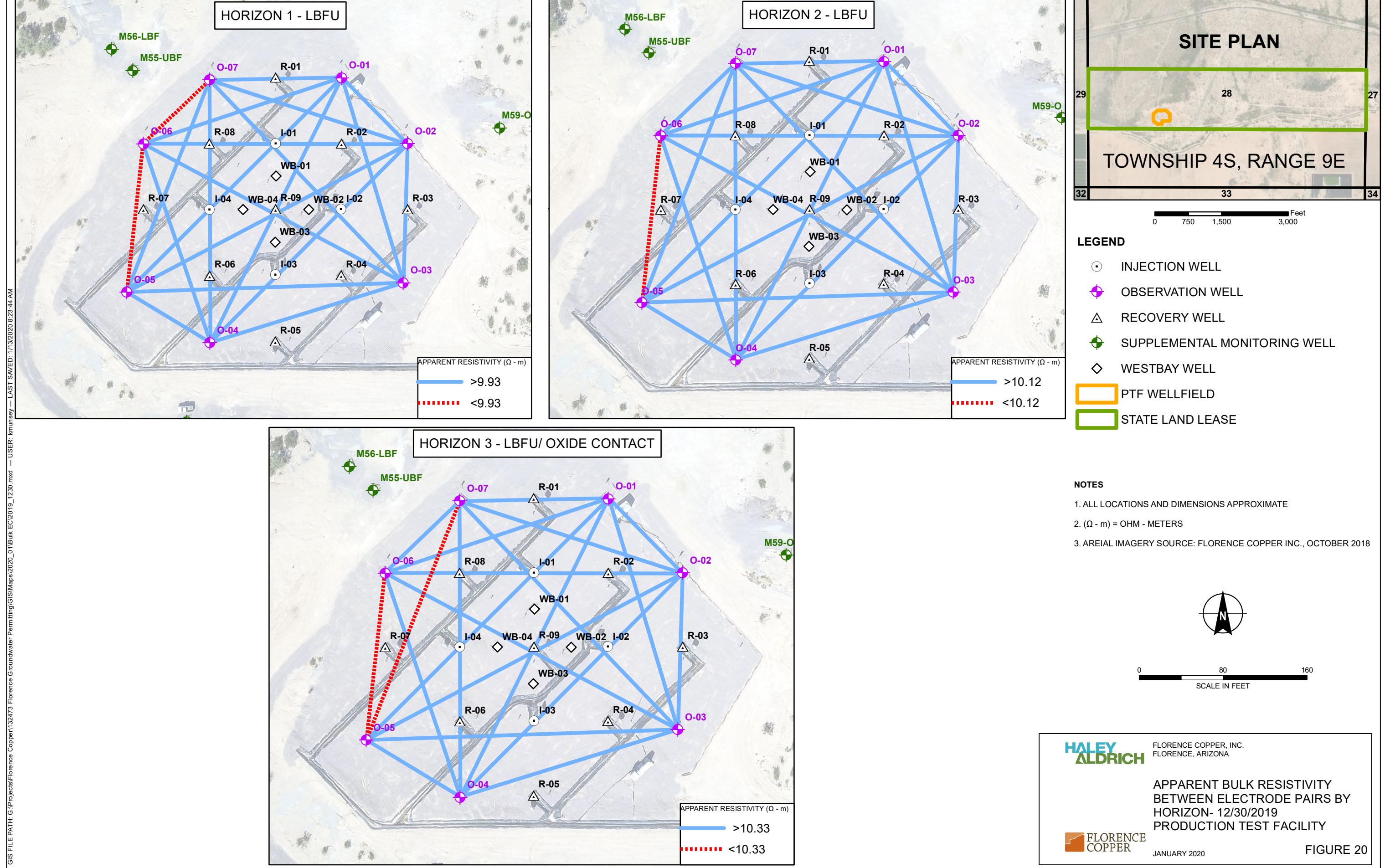


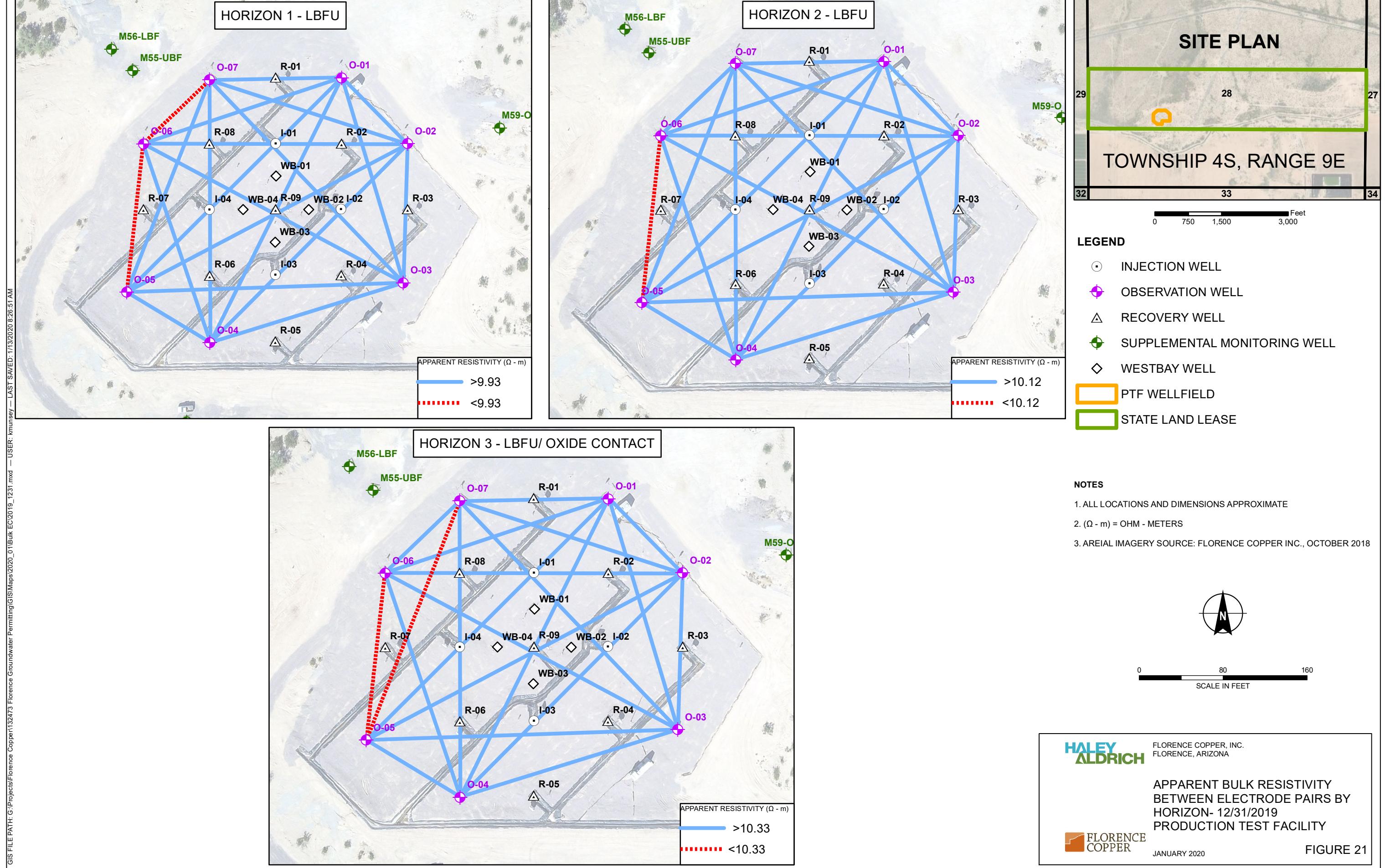










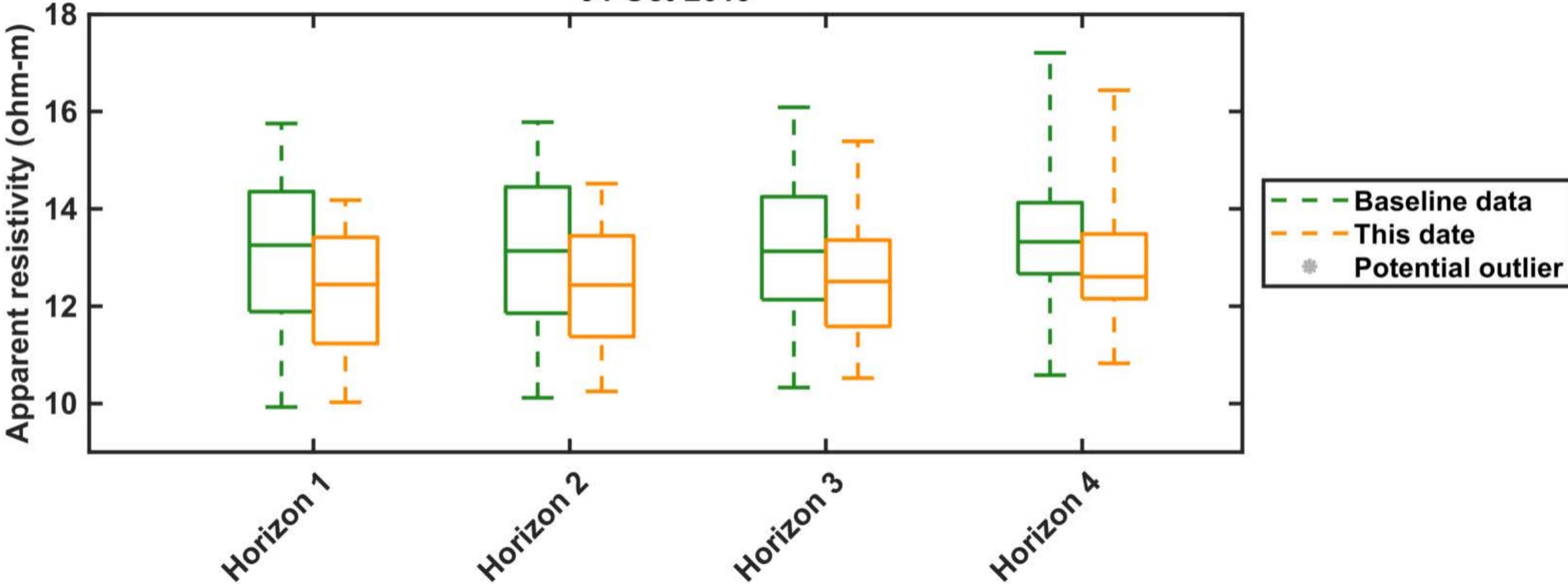


ATTACHMENT A

Box Diagrams for Fourth Quarter Monitoring Data

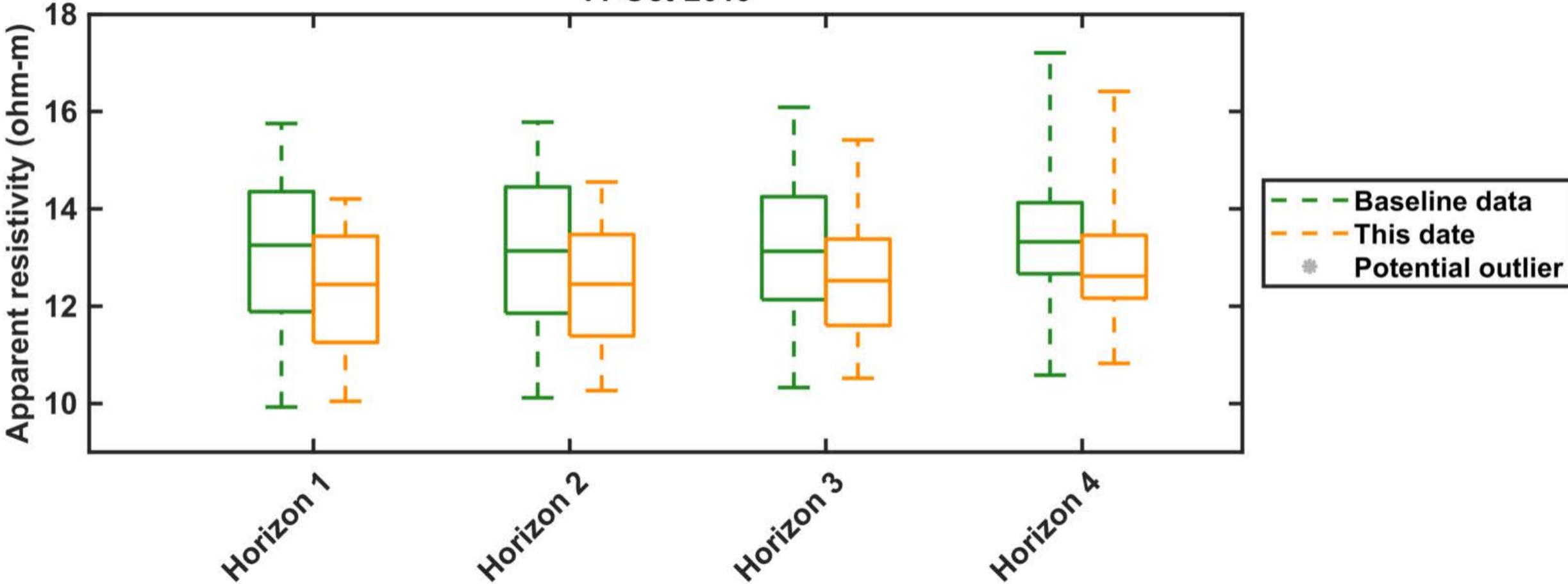
Florence electrical conductivity monitoring

04-Oct-2019



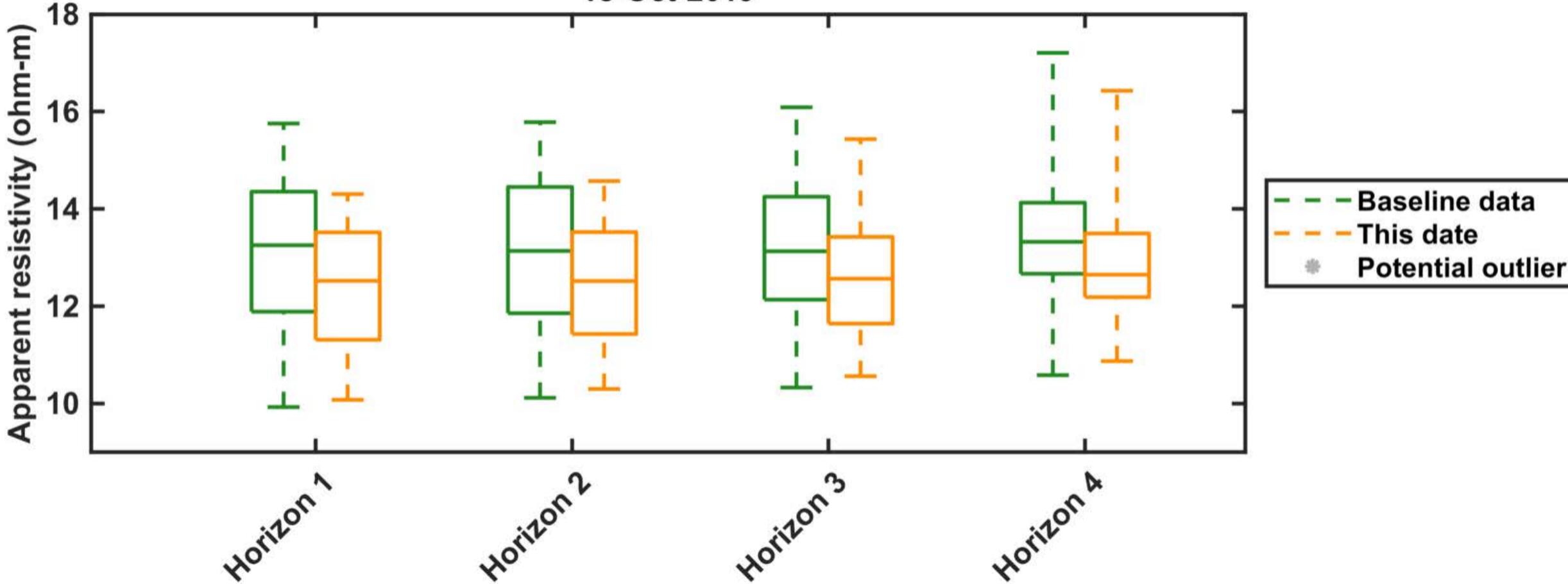
Florence electrical conductivity monitoring

11-Oct-2019



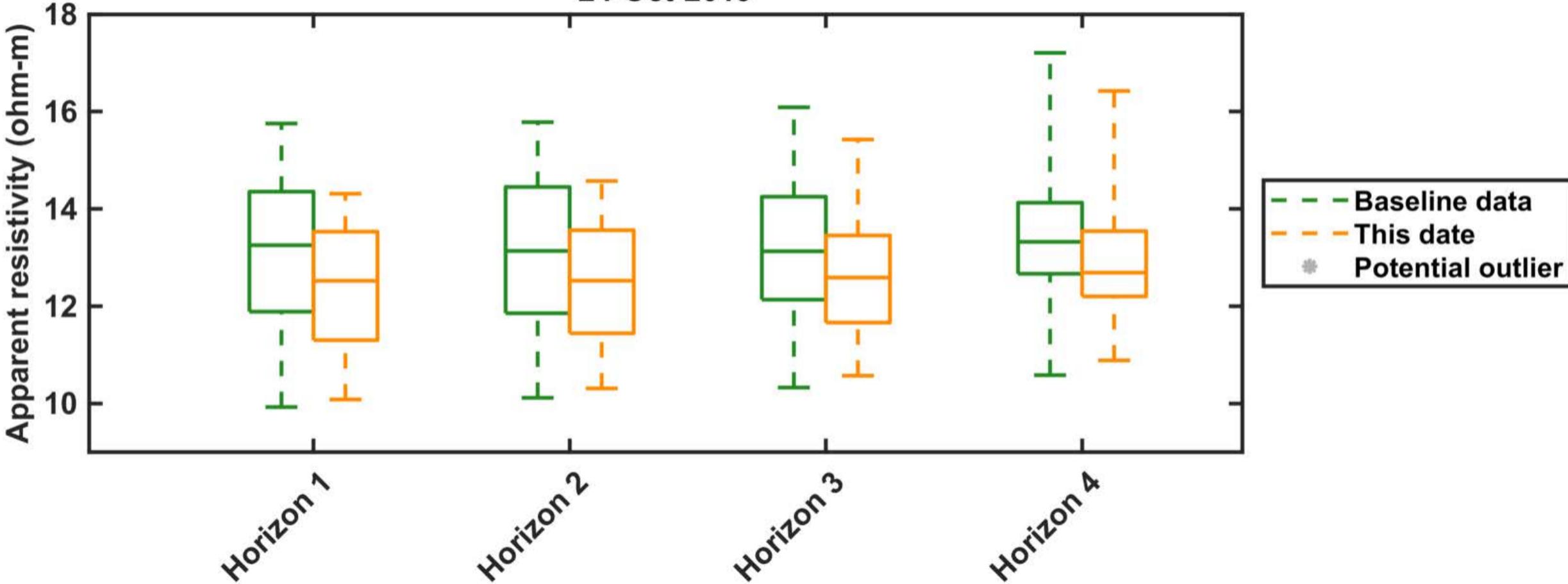
Florence electrical conductivity monitoring

18-Oct-2019



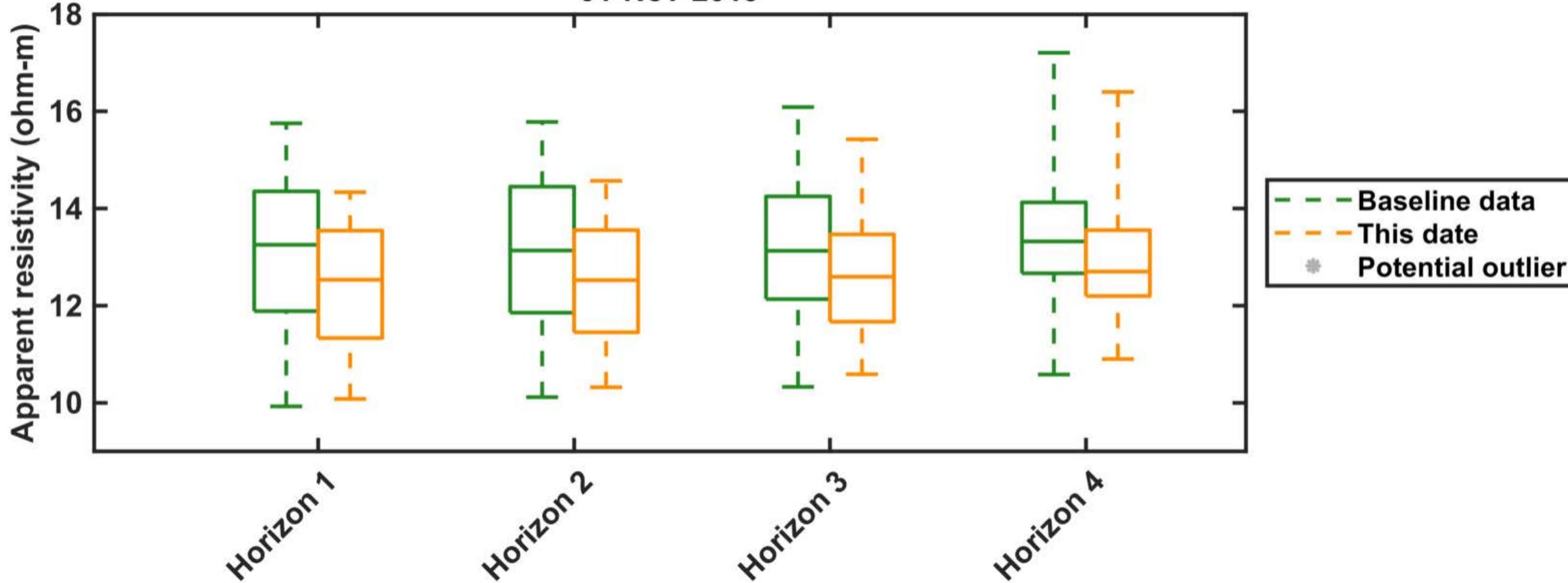
Florence electrical conductivity monitoring

24-Oct-2019



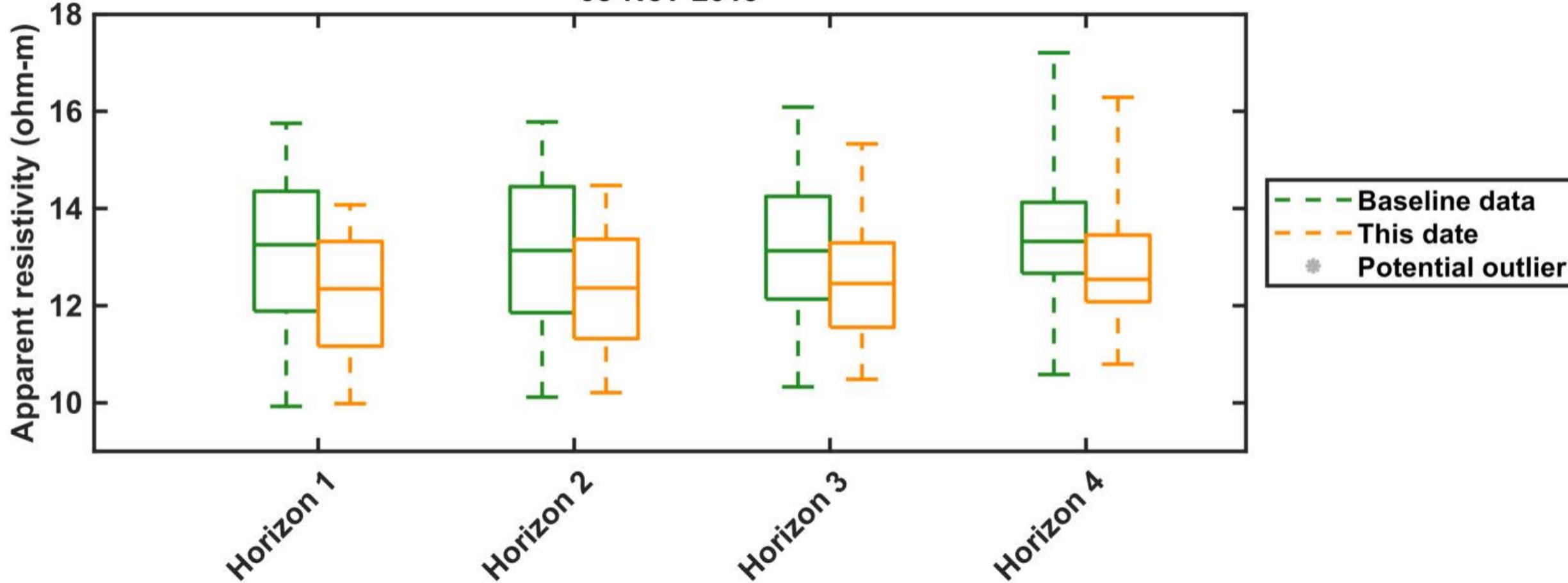
Florence electrical conductivity monitoring

01-Nov-2019



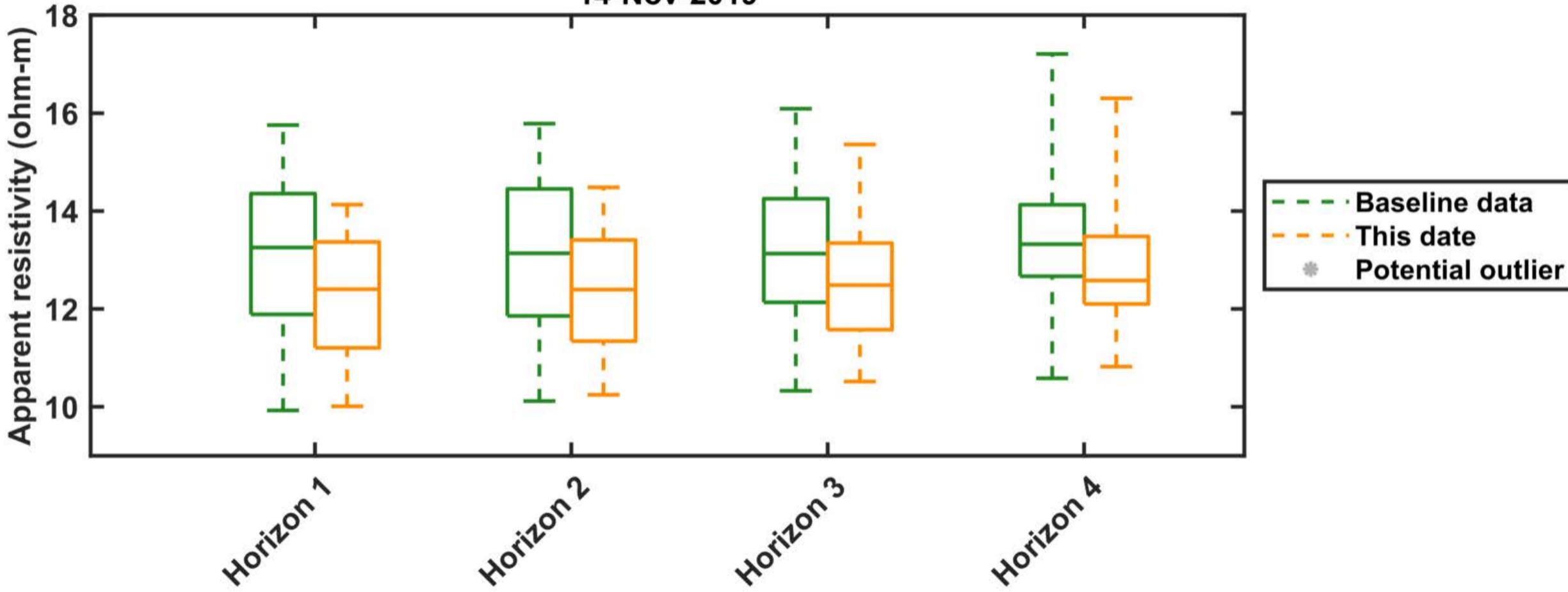
Florence electrical conductivity monitoring

08-Nov-2019



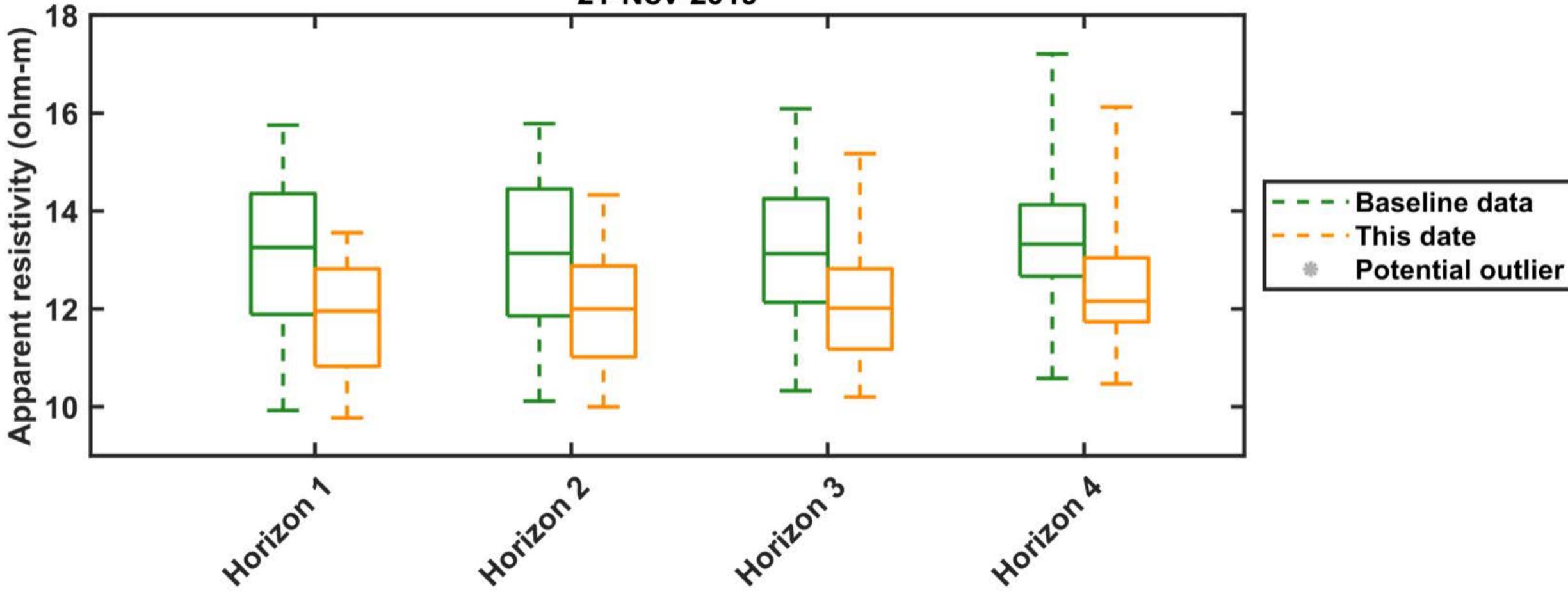
Florence electrical conductivity monitoring

14-Nov-2019



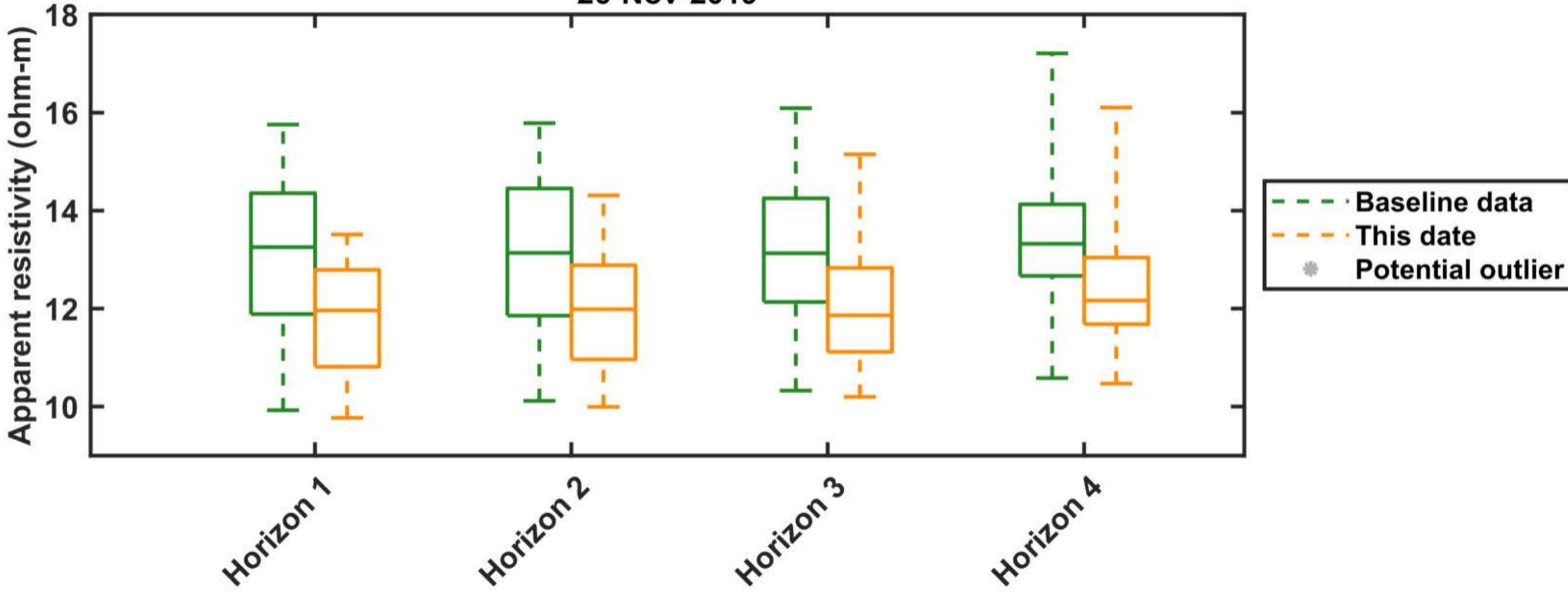
Florence electrical conductivity monitoring

21-Nov-2019



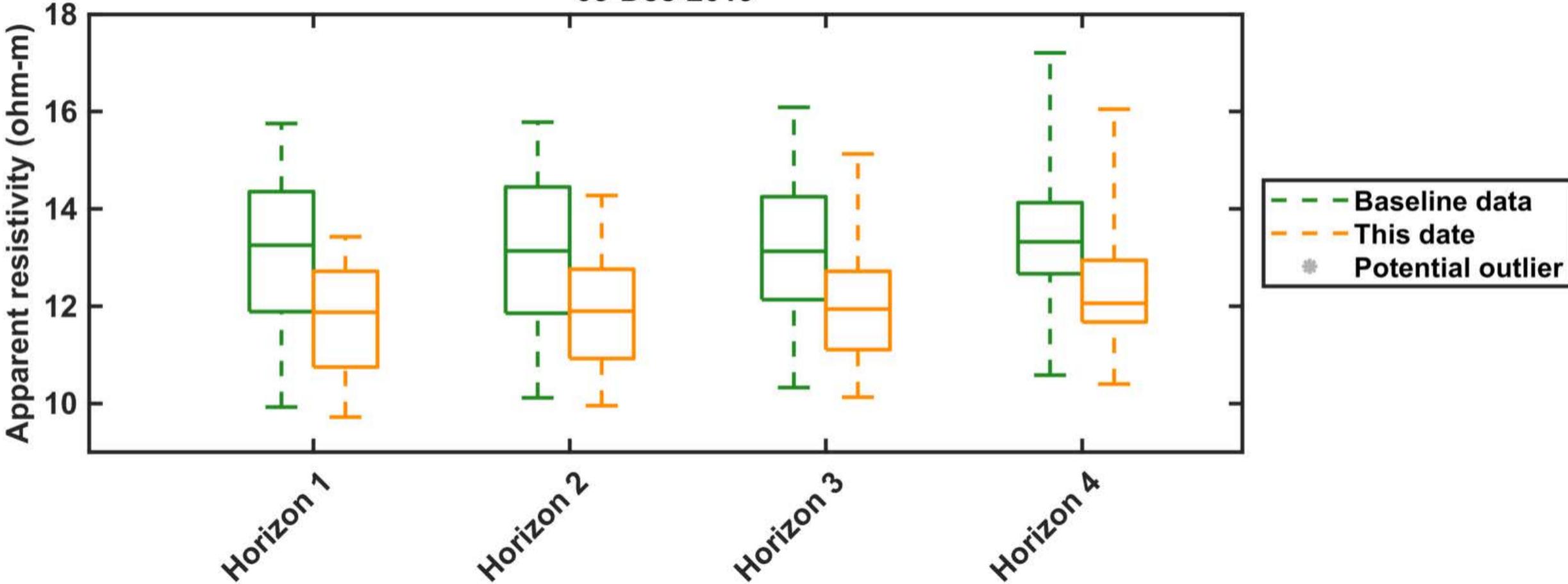
Florence electrical conductivity monitoring

26-Nov-2019



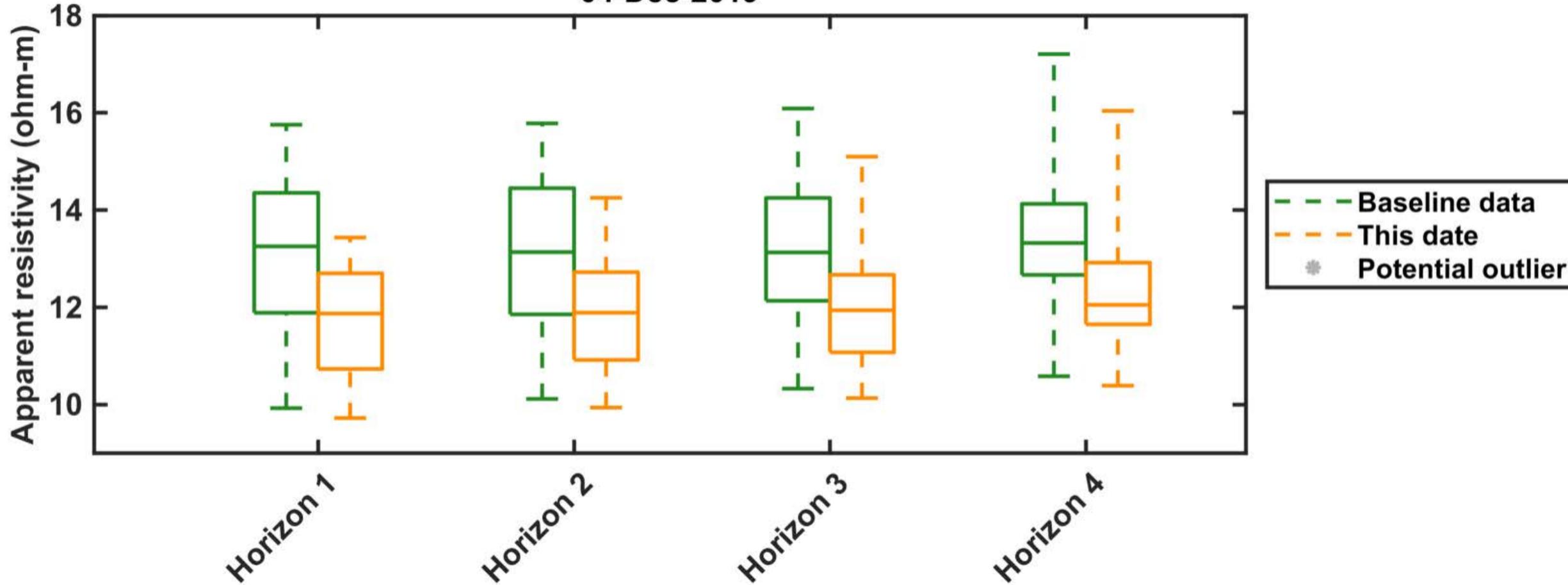
Florence electrical conductivity monitoring

03-Dec-2019



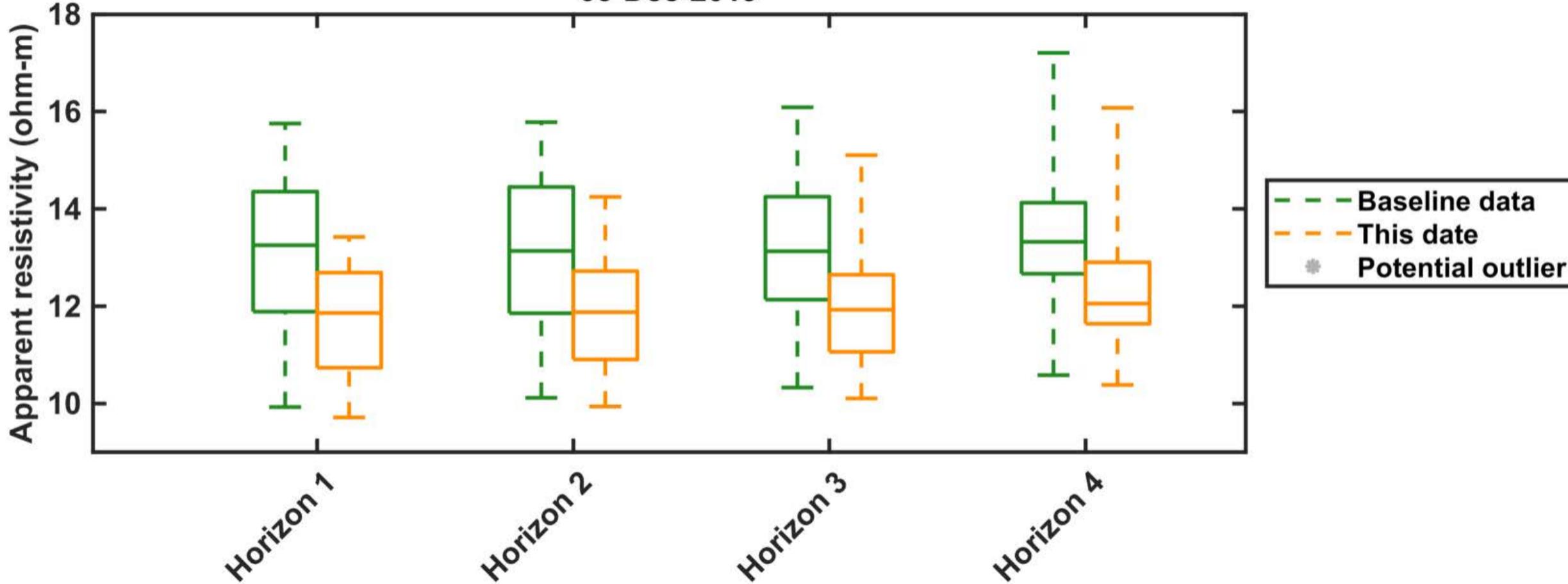
Florence electrical conductivity monitoring

04-Dec-2019



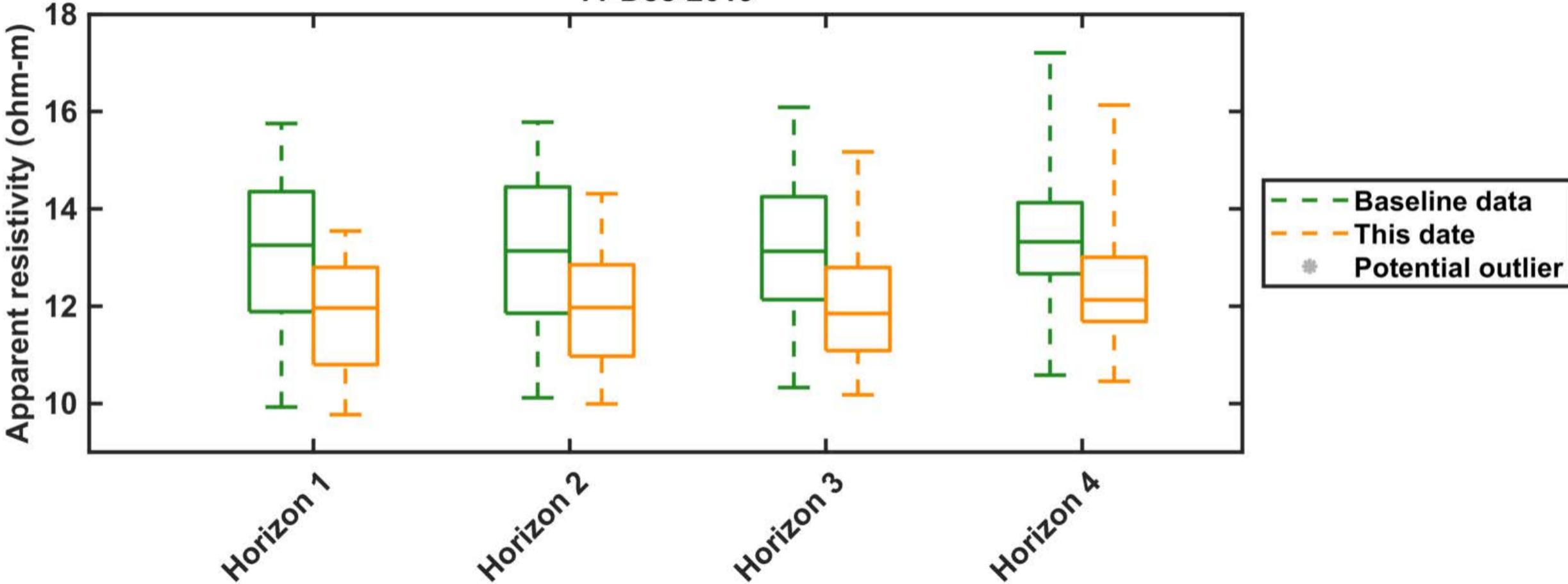
Florence electrical conductivity monitoring

05-Dec-2019



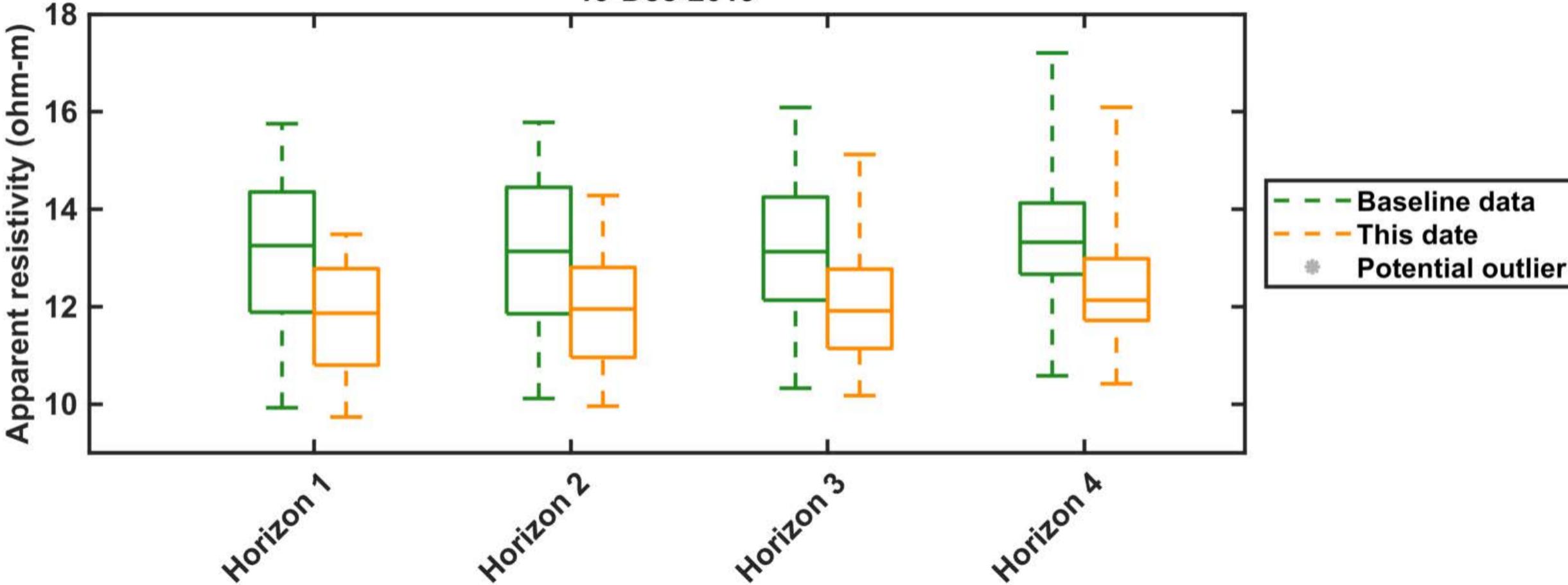
Florence electrical conductivity monitoring

11-Dec-2019



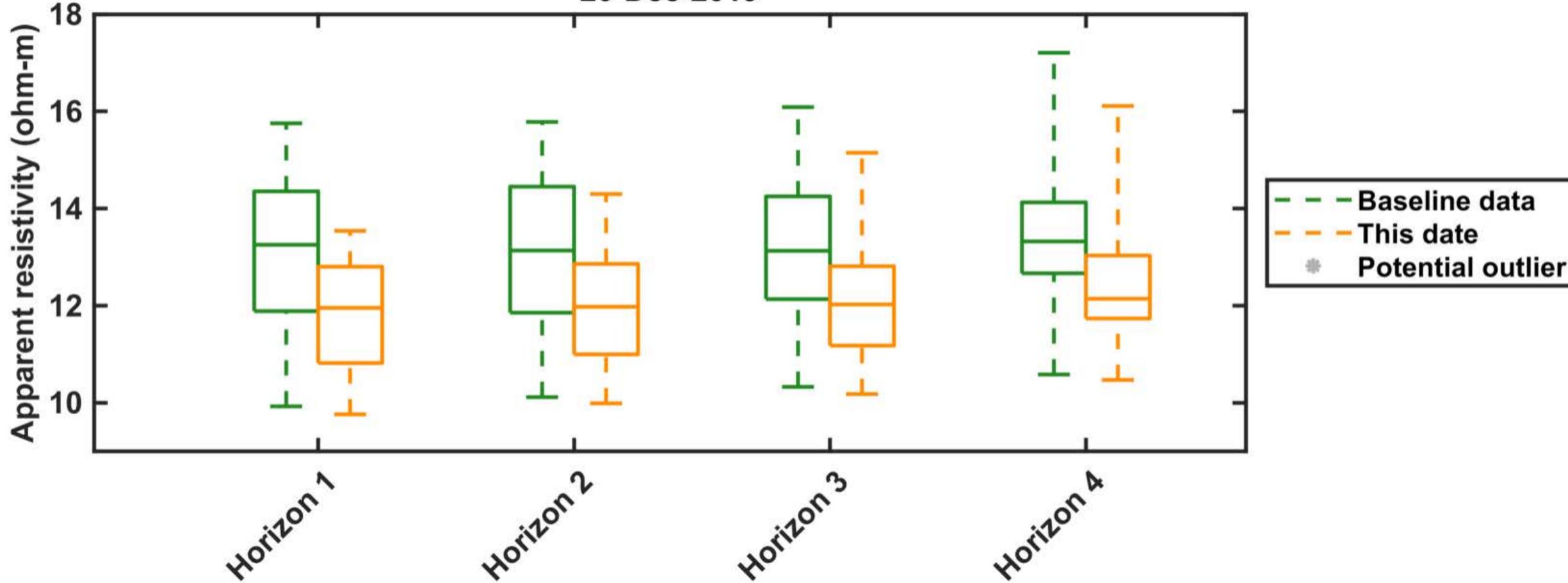
Florence electrical conductivity monitoring

19-Dec-2019



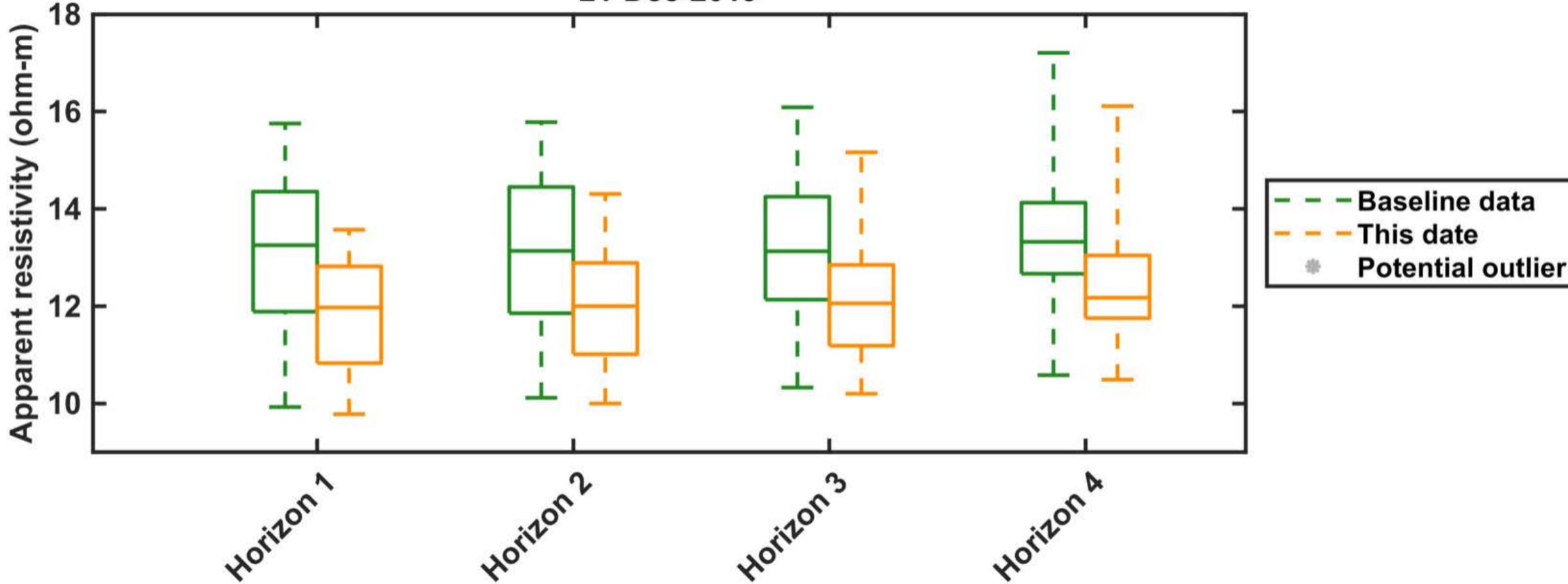
Florence electrical conductivity monitoring

20-Dec-2019



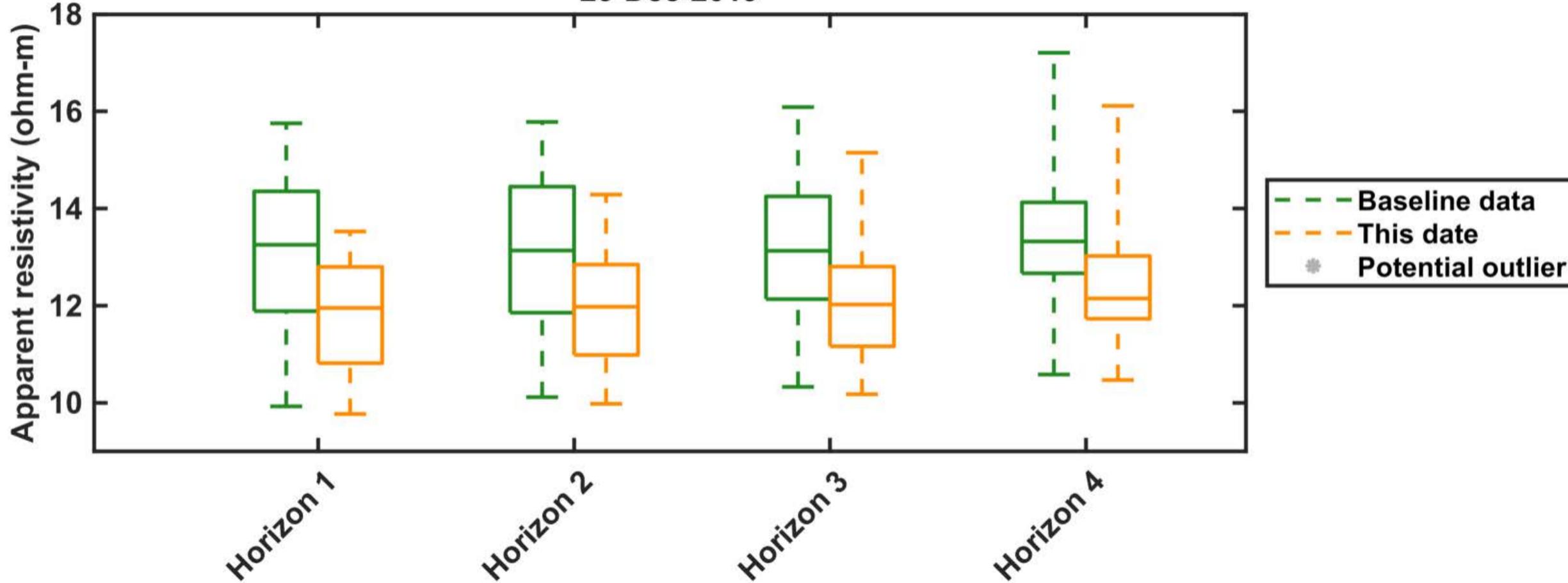
Florence electrical conductivity monitoring

21-Dec-2019



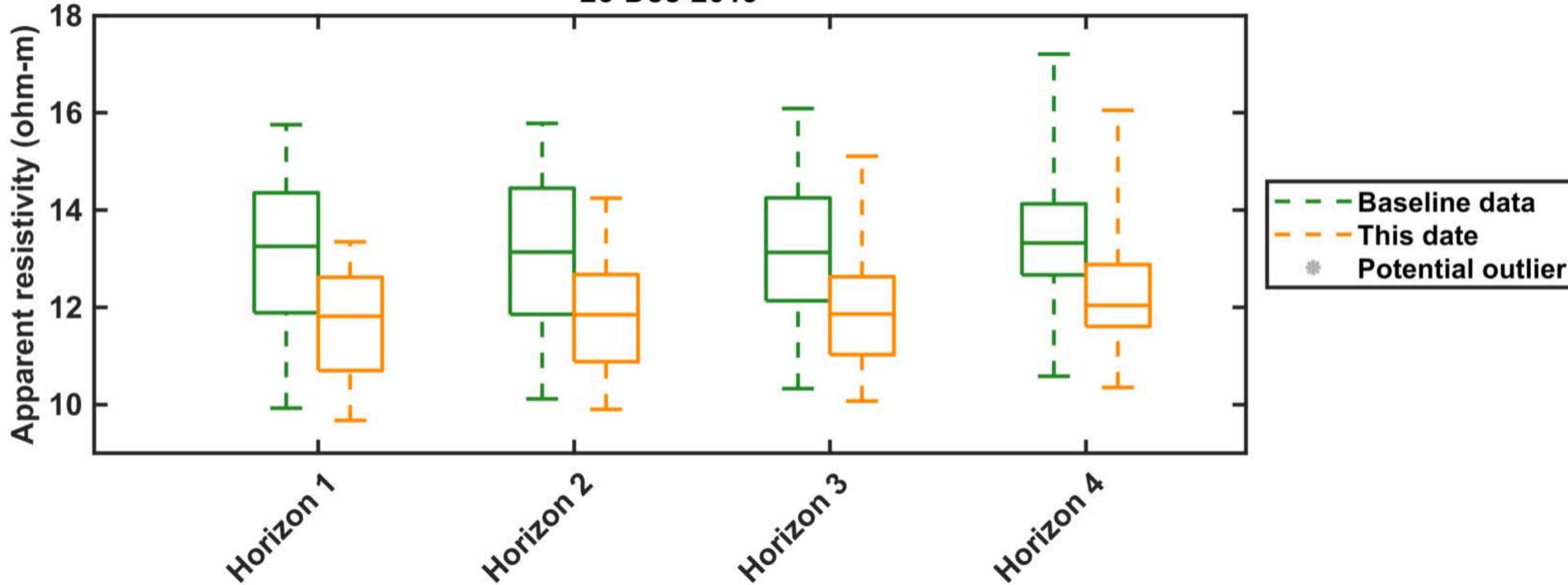
Florence electrical conductivity monitoring

23-Dec-2019



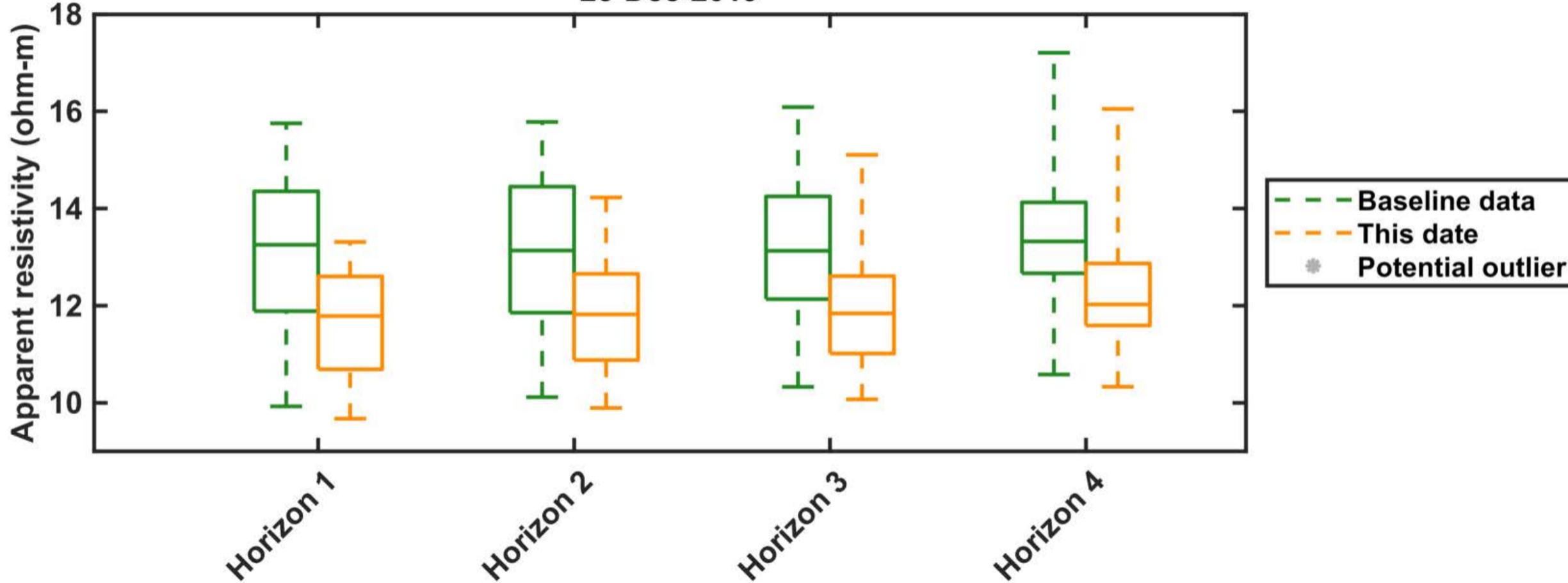
Florence electrical conductivity monitoring

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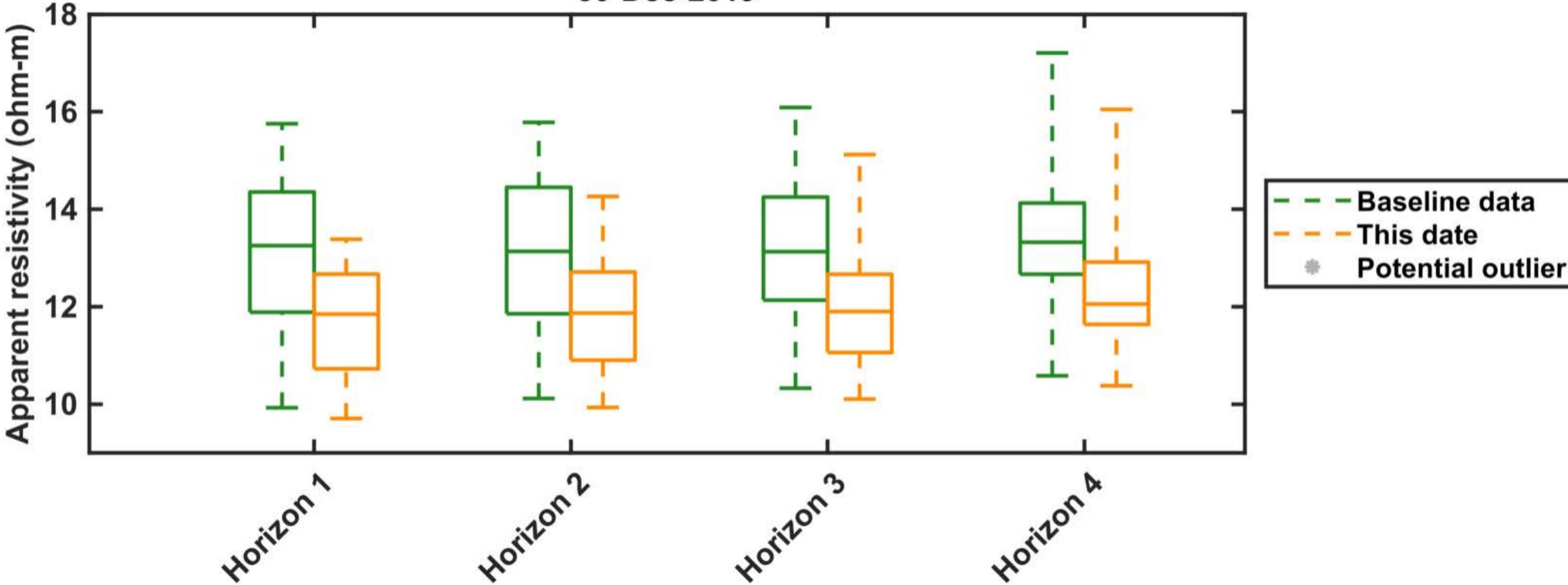
Florence electrical conductivity monitoring

28-Dec-2019



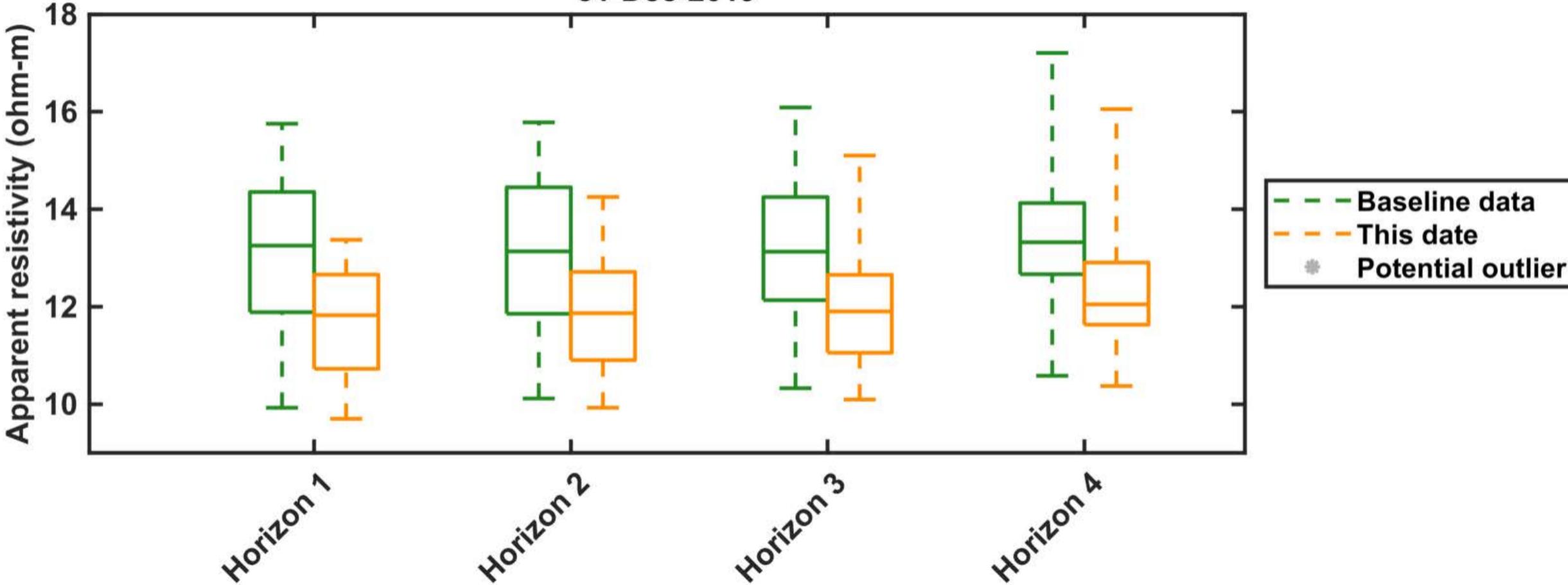
Florence electrical conductivity monitoring

30-Dec-2019



Florence electrical conductivity monitoring

31-Dec-2019

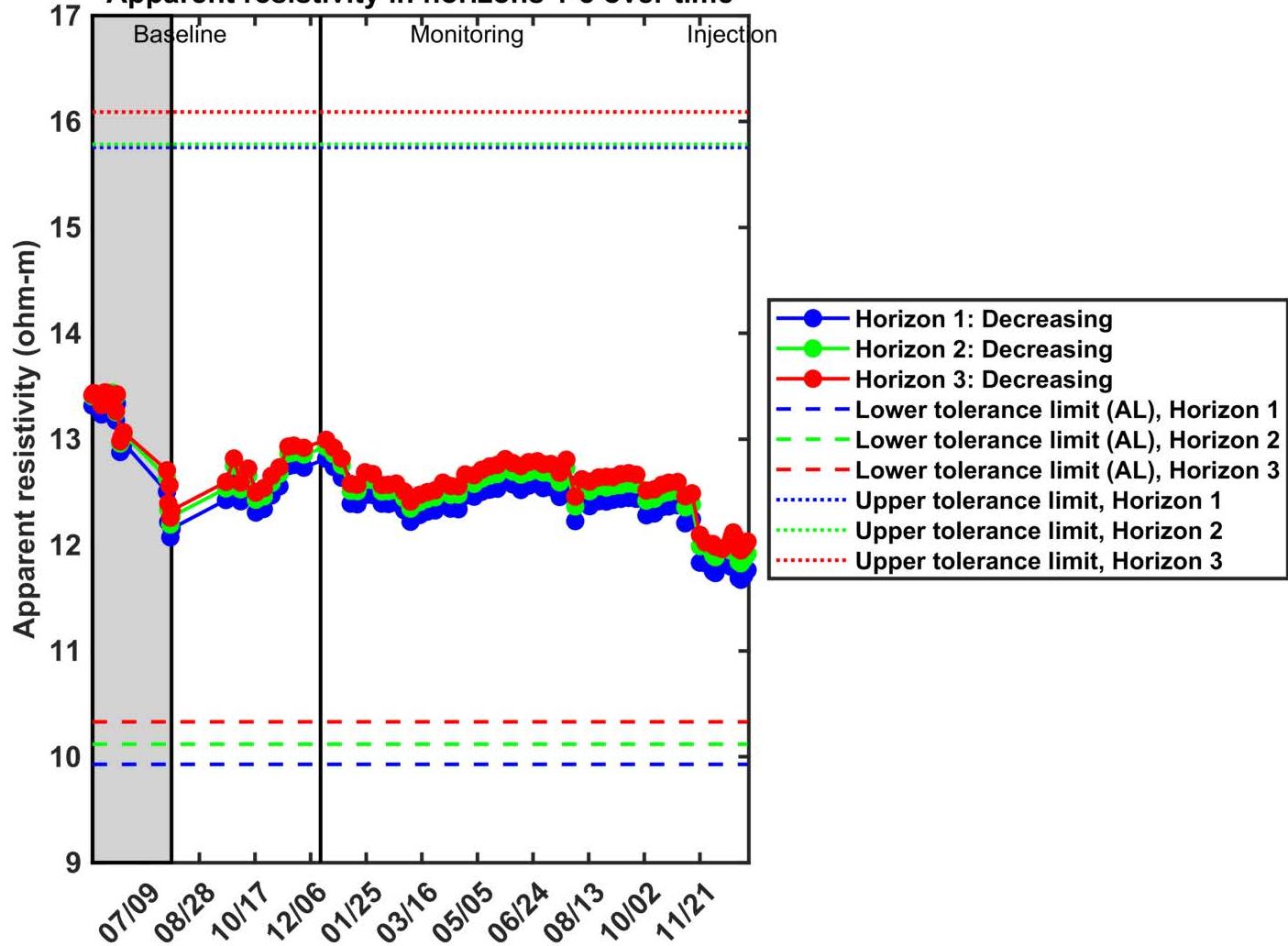


ATTACHMENT B

Summary Plot of Bulk Electrical Conductivity

Florence ambient electrical conductivity monitoring

Apparent resistivity in horizons 1-3 over time



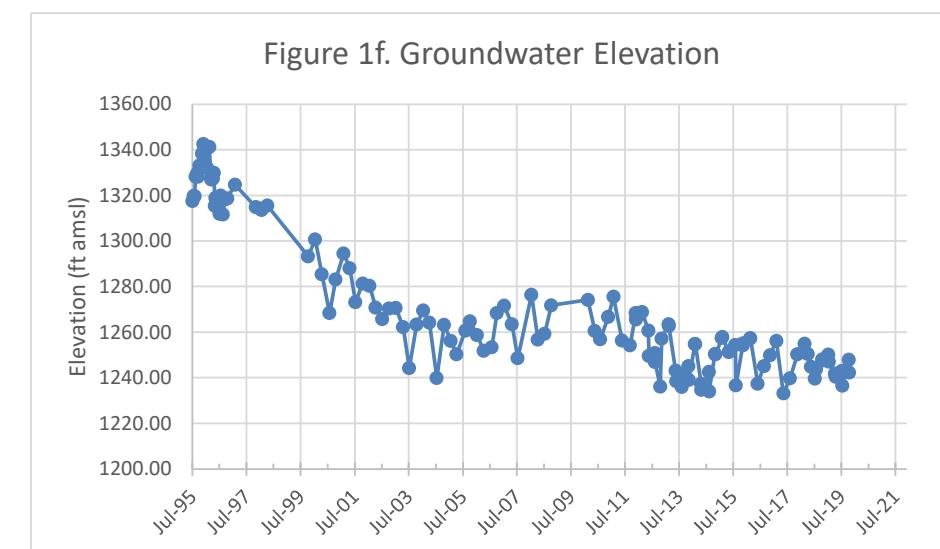
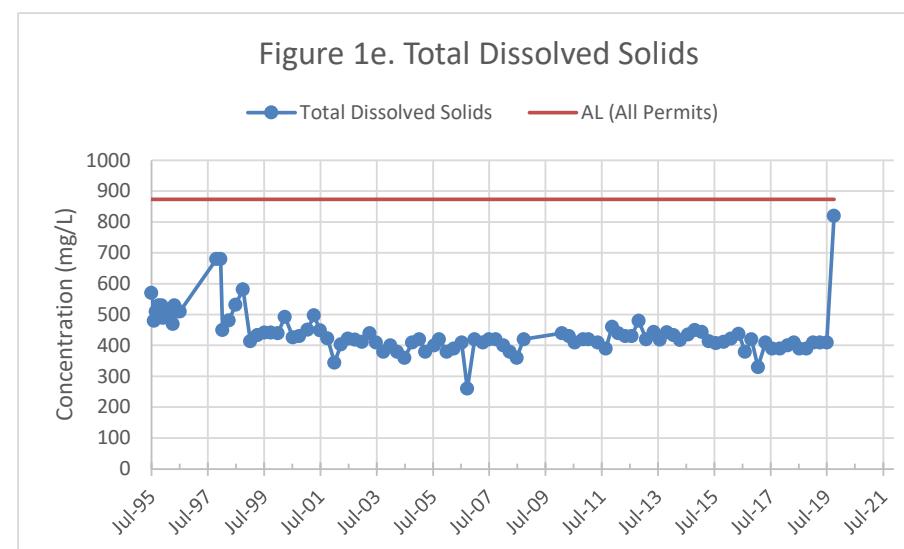
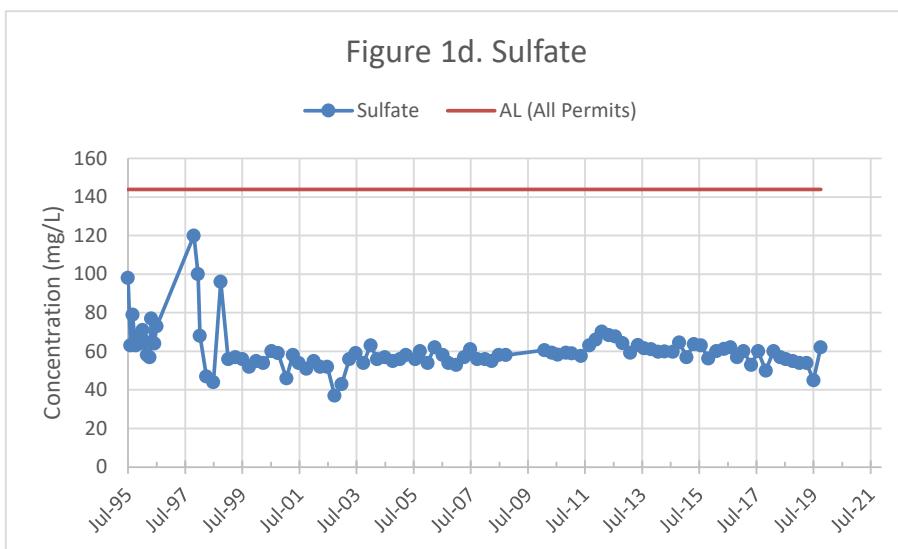
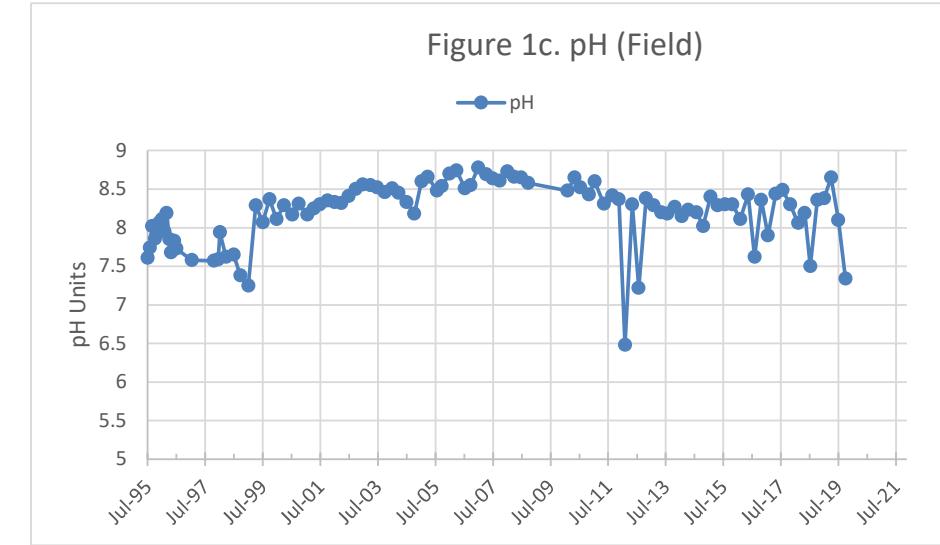
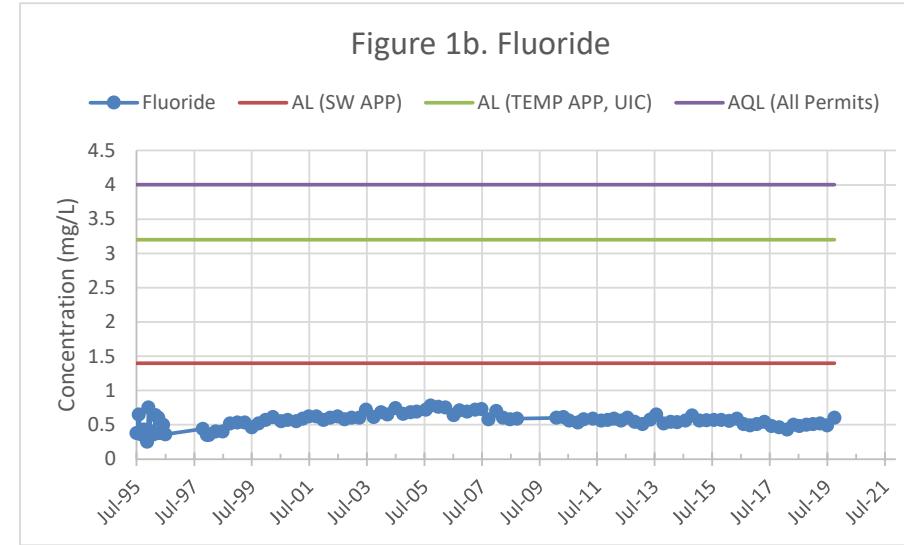
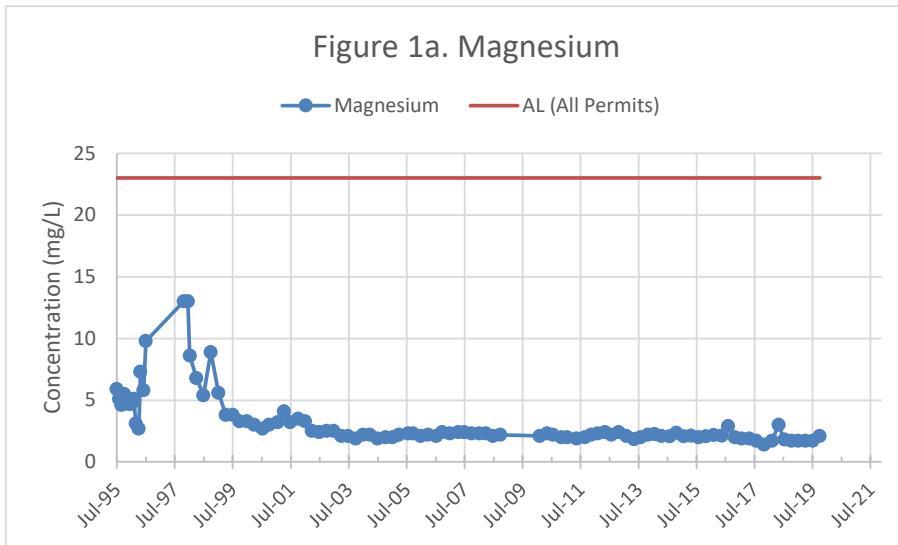
ATTACHMENT 6

- 6A. Quarterly Concentration Graphs**
- 6B. Well Details and Water Level Elevations**
- 6C. Groundwater Monitoring Summary**

ATTACHMENT 6A

Quarterly Concentration Graphs

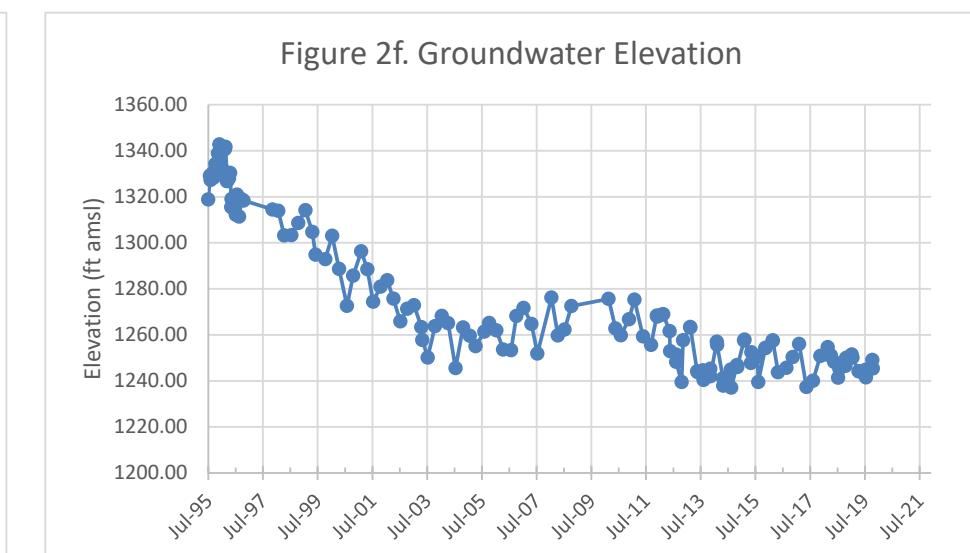
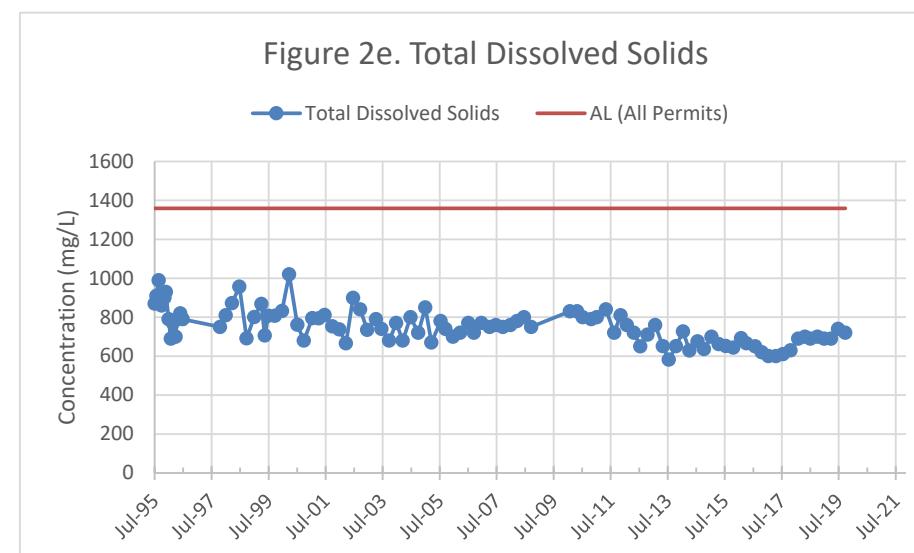
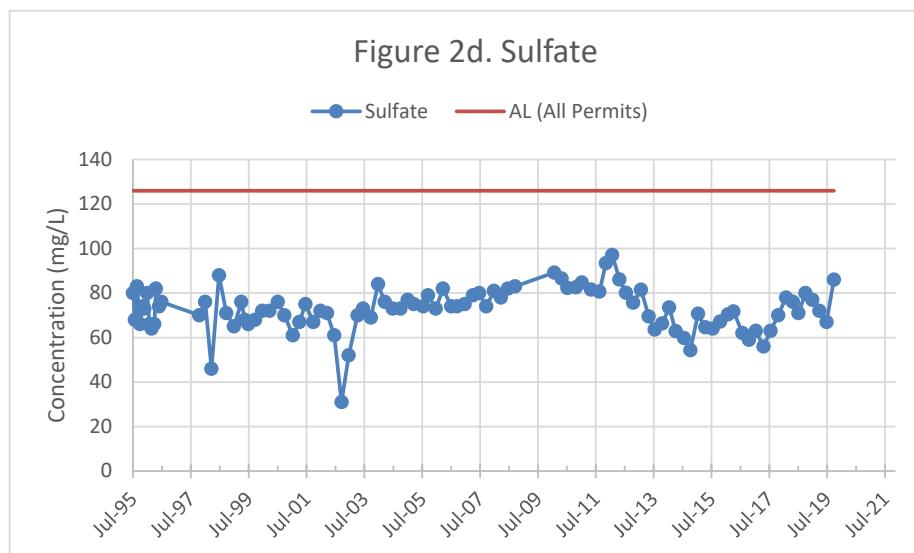
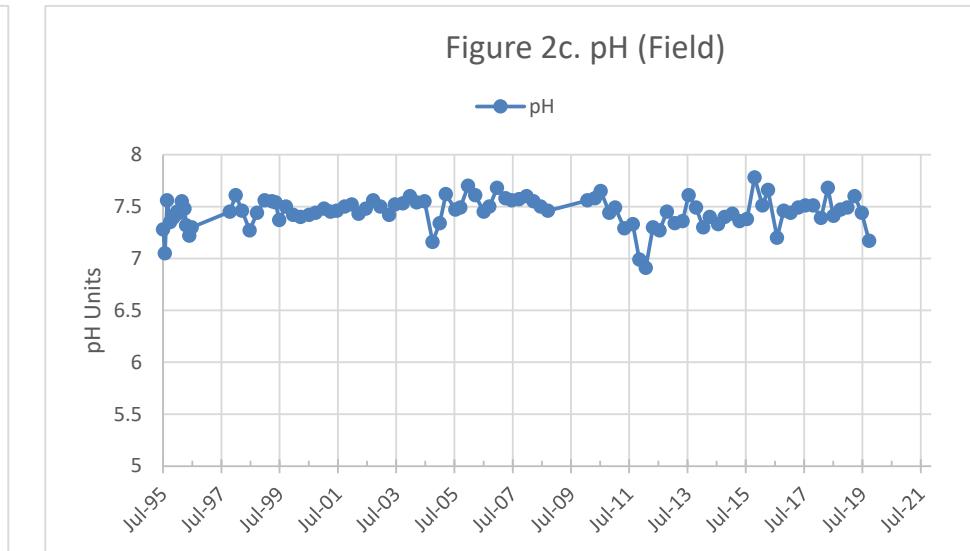
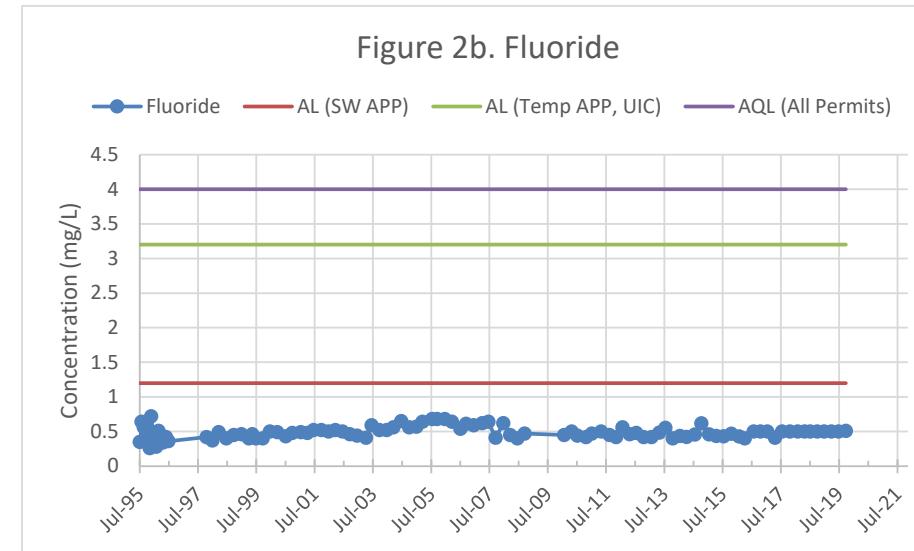
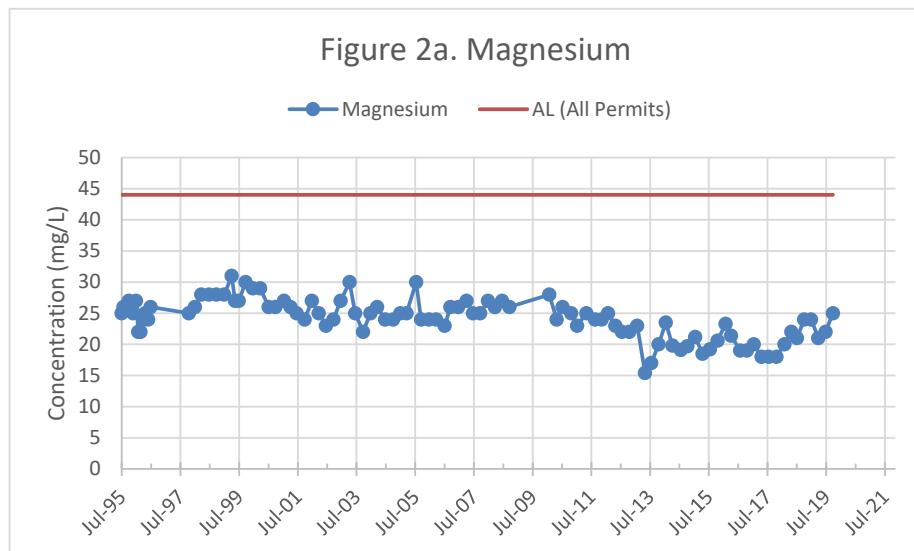
M14-GL QUARTERLY CONCENTRATION GRAPHS



Notes:

AL = Alert level
 APP = Aquifer Protection Permit
 AQL = Aquifer Quality Limit
 All Permits = SW APP, Temp ALL, and UIC
 SW APP = Sitewide APP No. P-101704
 Temp APP = Temporary APP No P-101704
 UIC = Underground Injection Control
 UIC = UIC Permit No. R9UIC-AZ3-FY11-1

M15-GU QUARTERLY CONCENTRATION GRAPHS



Notes:

- AL = Alert level
- APP = Aquifer Protection Permit
- AQL = Aquifer Quality Limit
- All Permits = SW APP, Temp ALL, and UIC
- SW APP = Sitewide APP No. P-101704
- Temp APP = Temporary APP No P-101704
- UIC = Underground Injection Control
- UIC = UIC Permit No. R9UIC-AZ3-FY11-1

M22-O QUARTERLY CONCENTRATION GRAPHS

Figure 3a. Magnesium

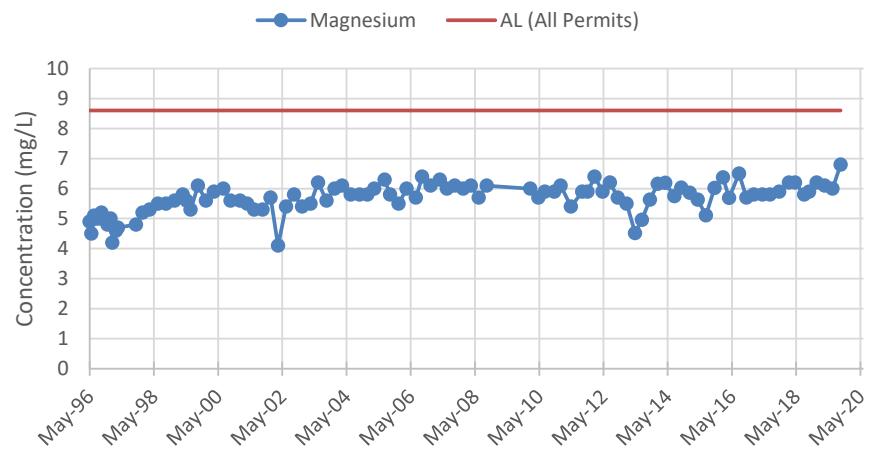


Figure 3b. Fluoride

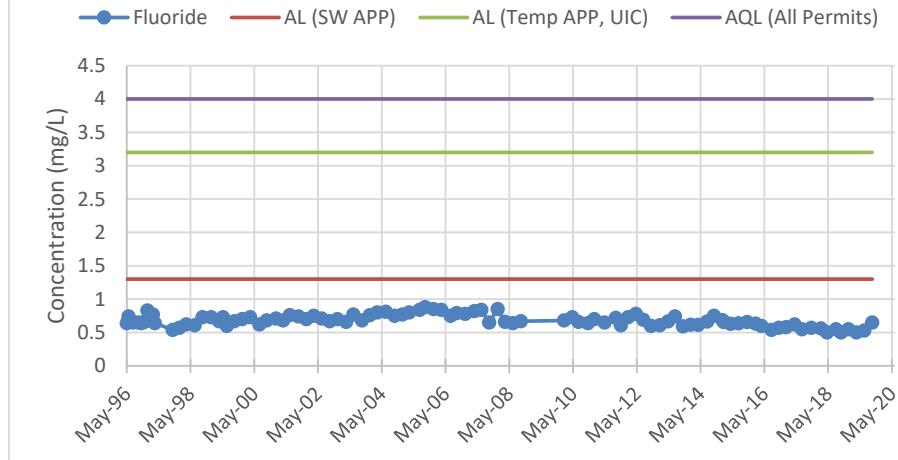


Figure 3c. pH (Field)

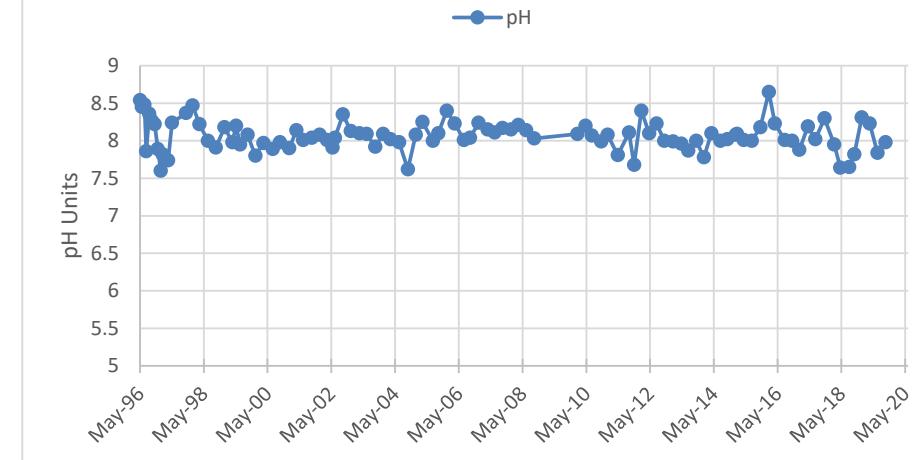


Figure 3d. Sulfate

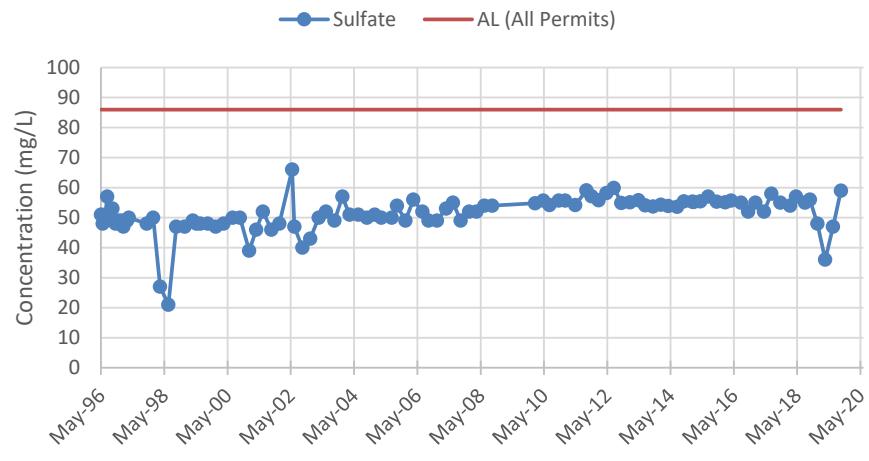


Figure 3e. Total Dissolved Solids

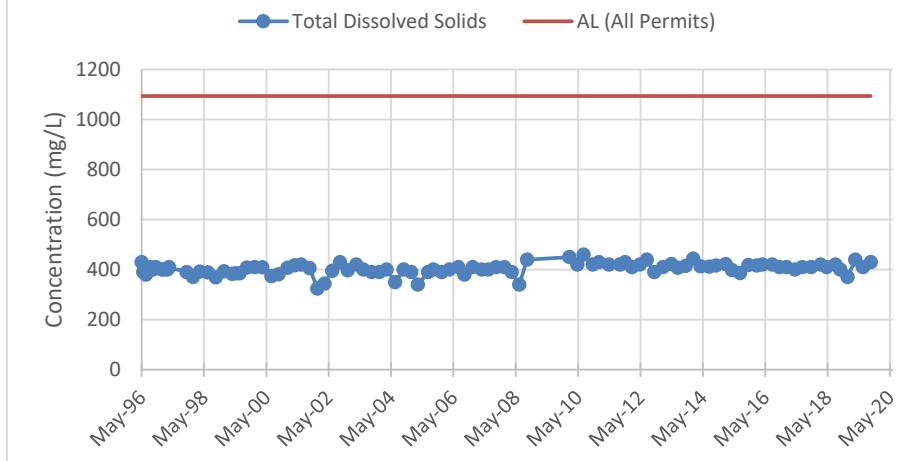
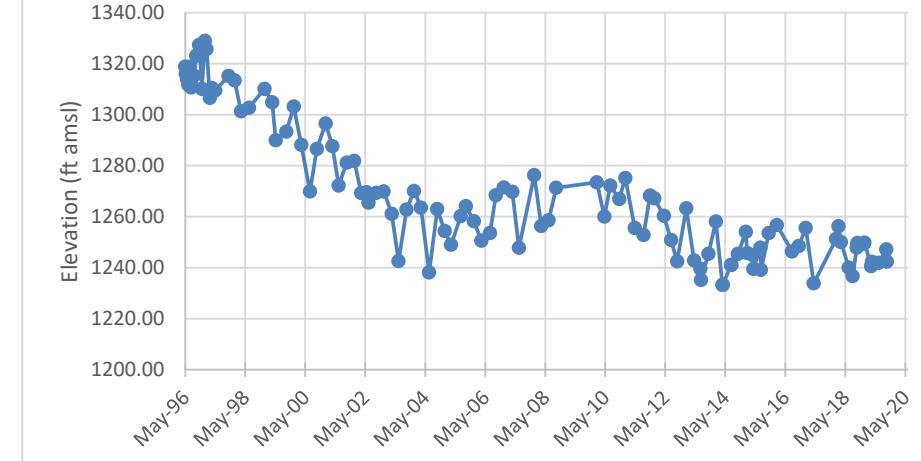


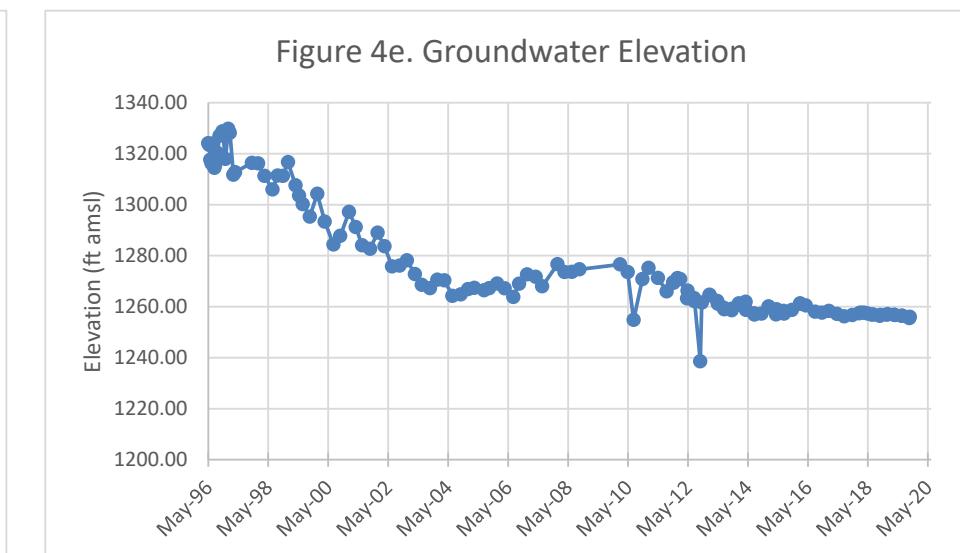
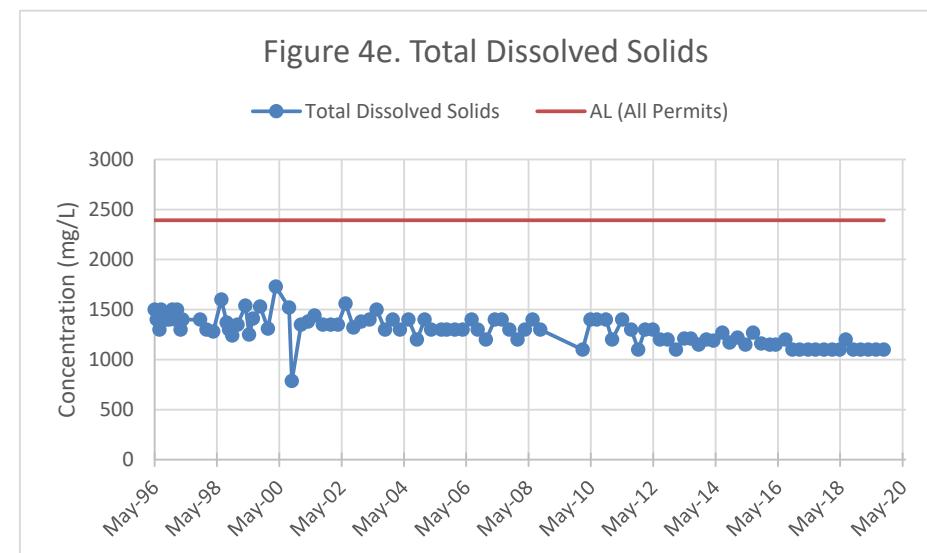
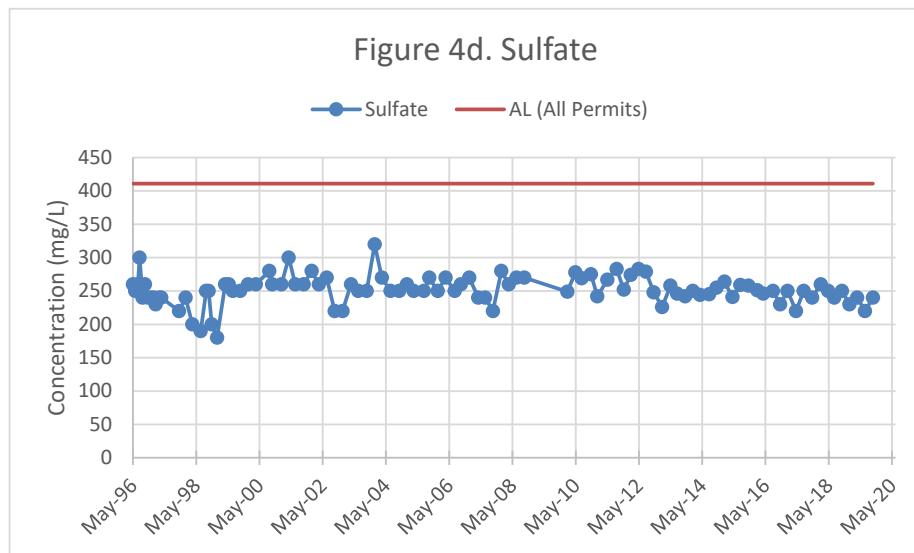
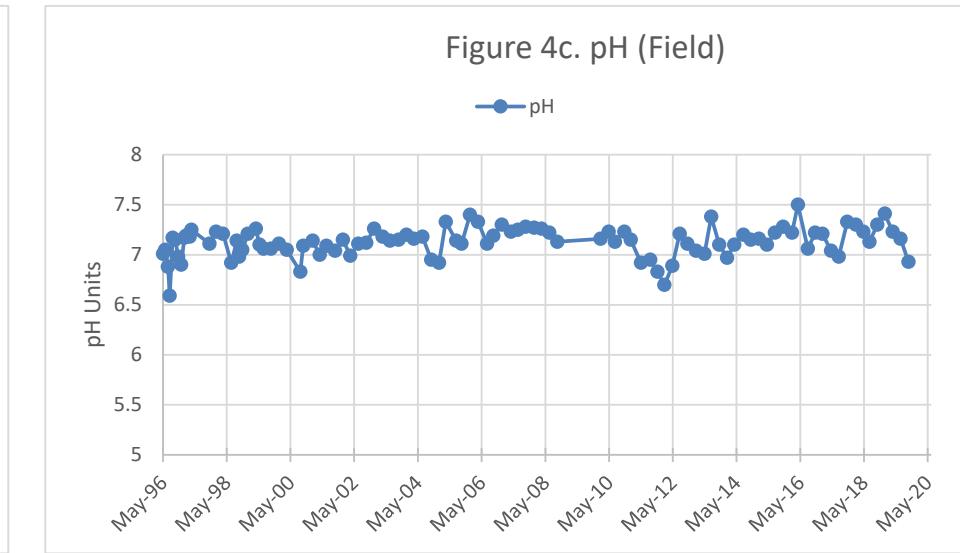
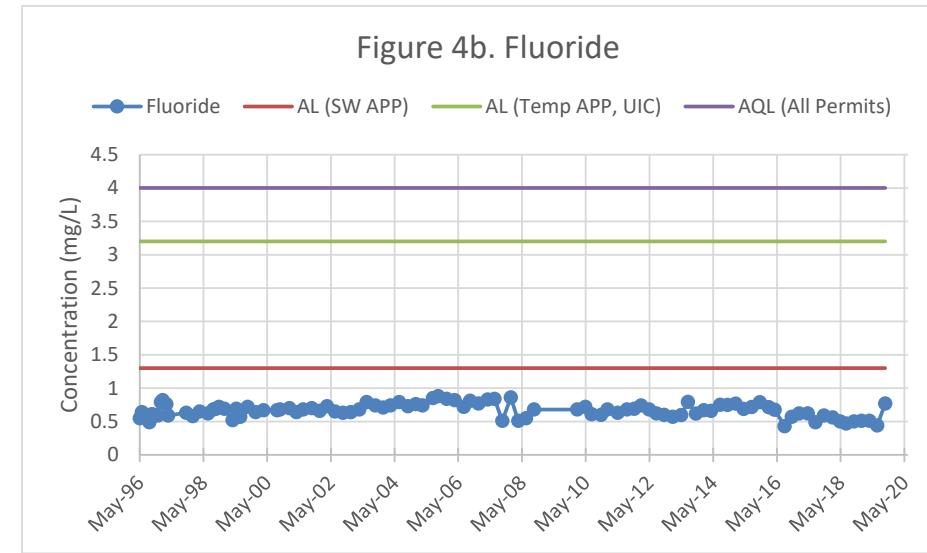
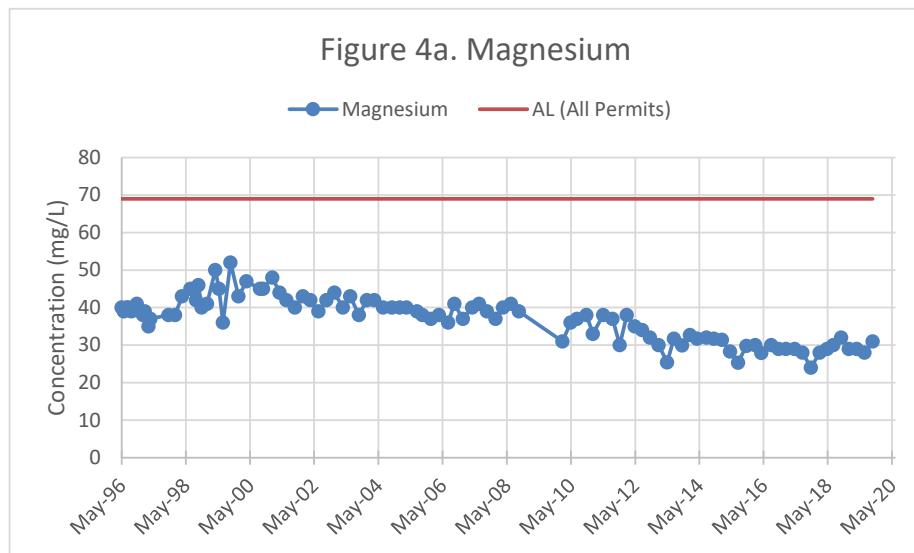
Figure 3f. Groundwater Elevation



Notes:

AL = Alert level
 APP = Aquifer Protection Permit
 AQL = Aquifer Quality Limit
 All Permits = SW APP, Temp ALL, and UIC
 SW APP = Sitewide APP No. P-101704
 Temp APP = Temporary APP No P-101704
 UIC = Underground Injection Control
 UIC = UIC Permit No. R9UIC-AZ3-FY11-1

M23-UBF QUARTERLY CONCENTRATION GRAPHS



Notes:

AL = Alert level
 APP = Aquifer Protection Permit
 AQL = Aquifer Quality Limit
 All Permits = SW APP, Temp ALL, and UIC
 SW APP = Sitewide APP No. P-101704
 Temp APP = Temporary APP No P-101704
 UIC = Underground Injection Control
 UIC = UIC Permit No. R9UIC-AZ3-FY11-1

M52-UBF QUARTERLY CONCENTRATION GRAPHS

Figure 5a. Magnesium

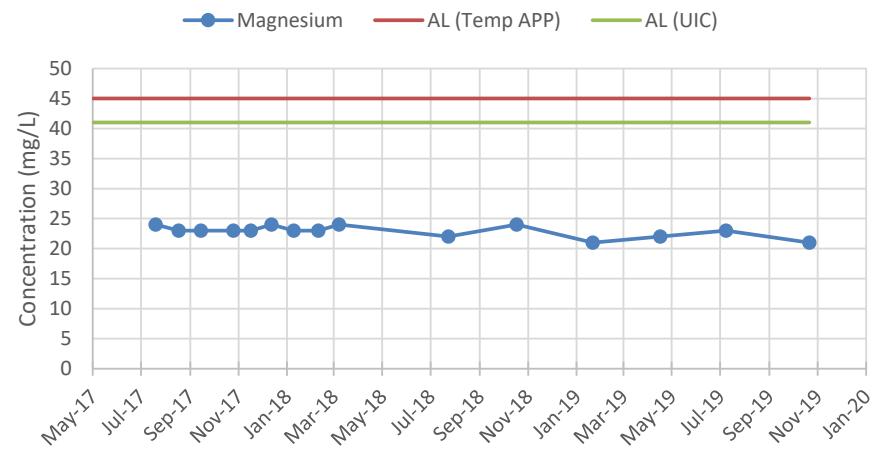


Figure 5b. Fluoride

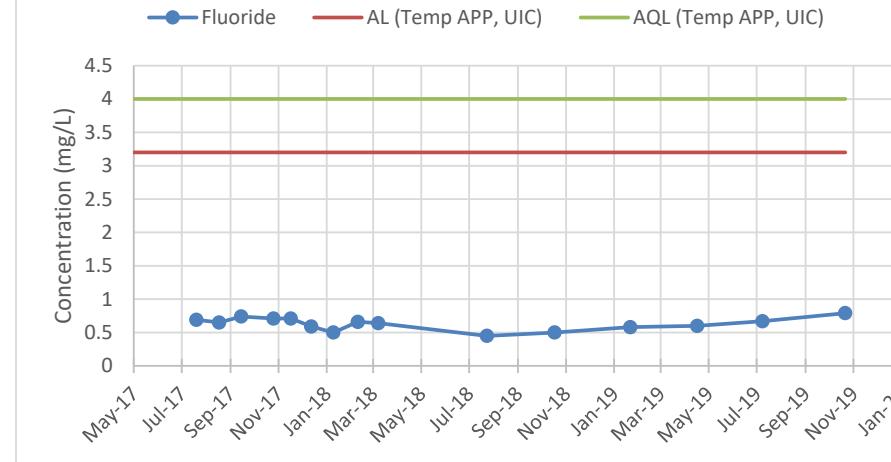


Figure 5c. pH (Field)

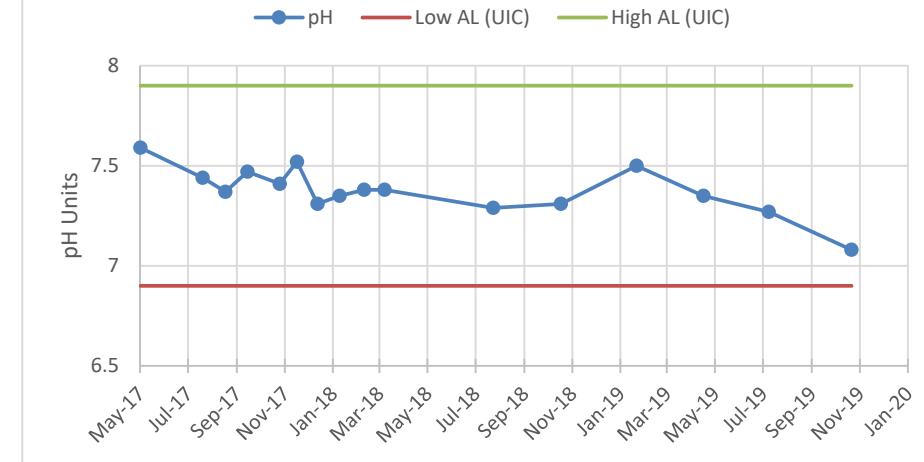


Figure 5d. Sulfate

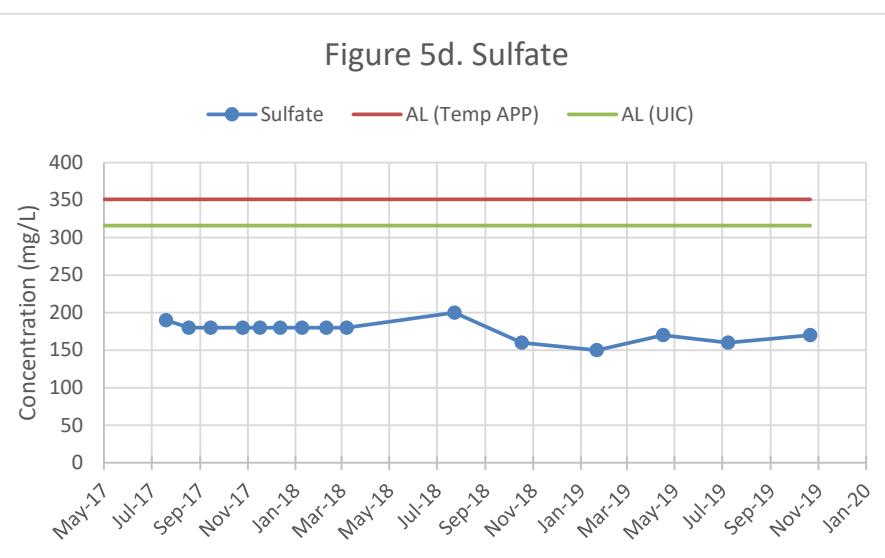


Figure 5e. Total Dissolved Solids

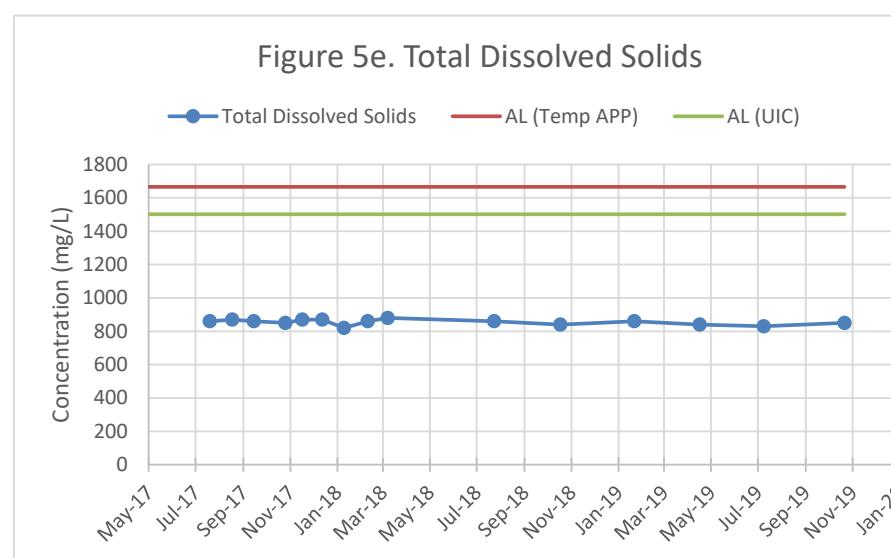
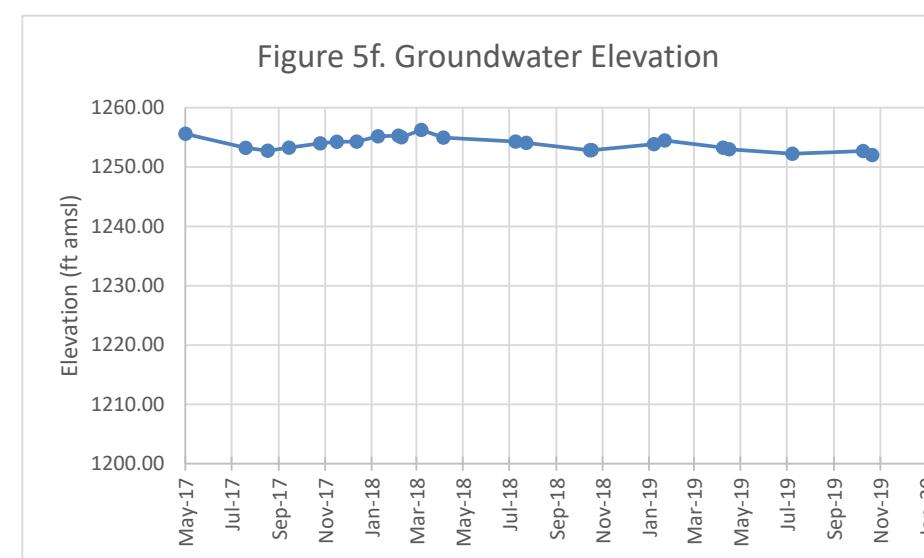


Figure 5f. Groundwater Elevation



Notes:

AL = Alert level
 APP = Aquifer Protection Permit
 AQL = Aquifer Quality Limit
 Temp APP = Temporary APP No P-101704
 UIC = Underground Injection Control
 UIC = UIC Permit No. R9UIC-AZ3-FY11-1

M54-LBF QUARTERLY CONCENTRATION GRAPHS

Figure 6a. Magnesium

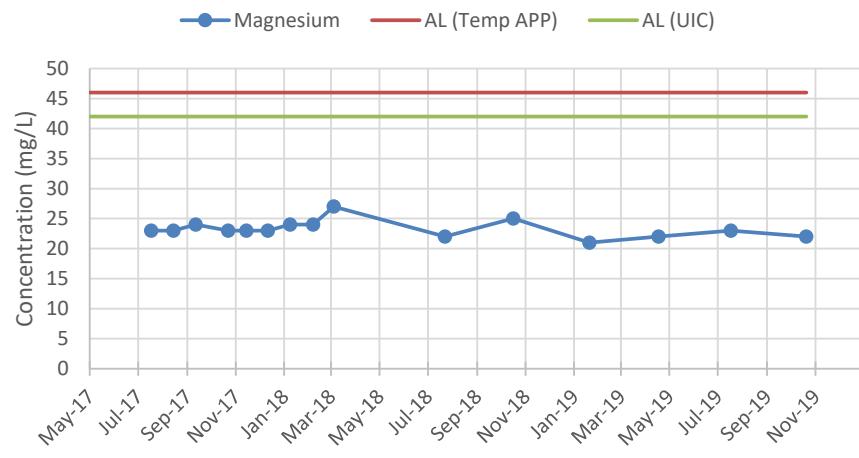


Figure 6b. Fluoride

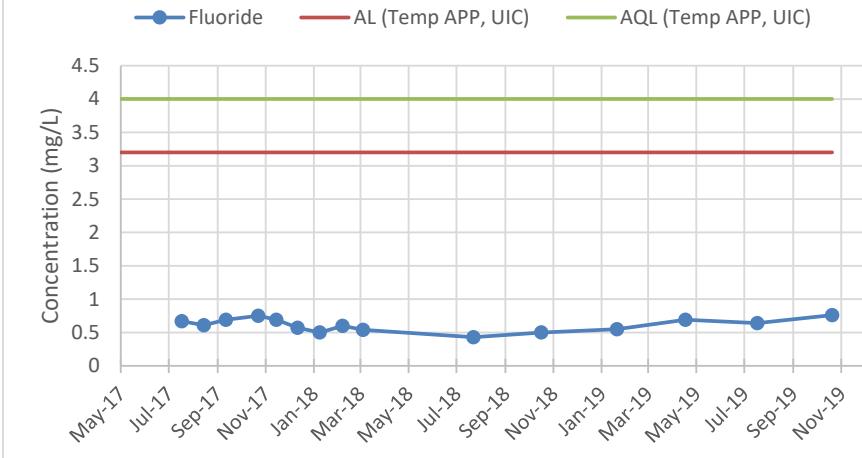


Figure 6c. pH (Field)

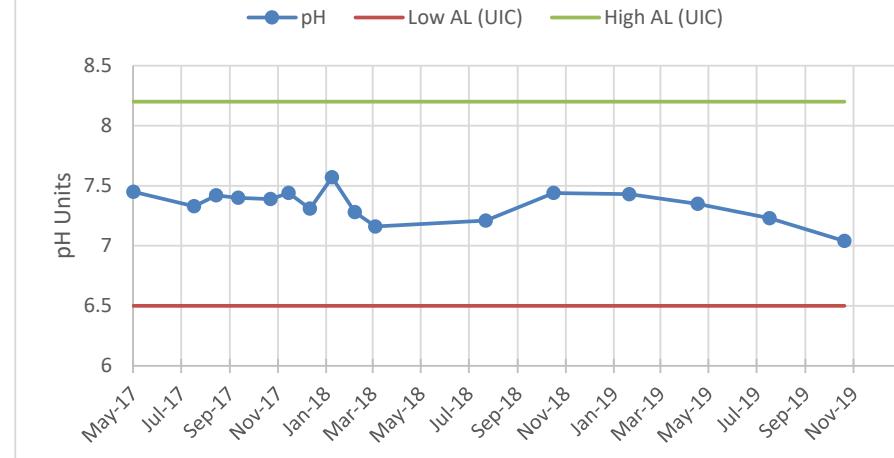


Figure 6d. Sulfate

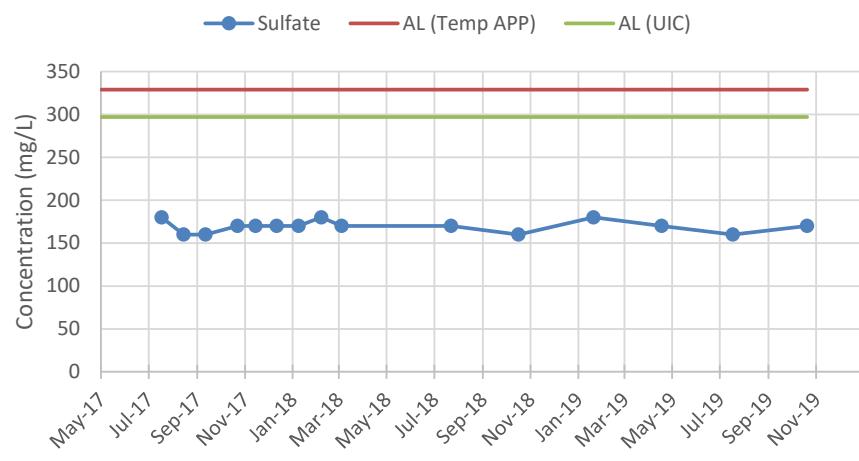


Figure 6e. Total Dissolved Solids

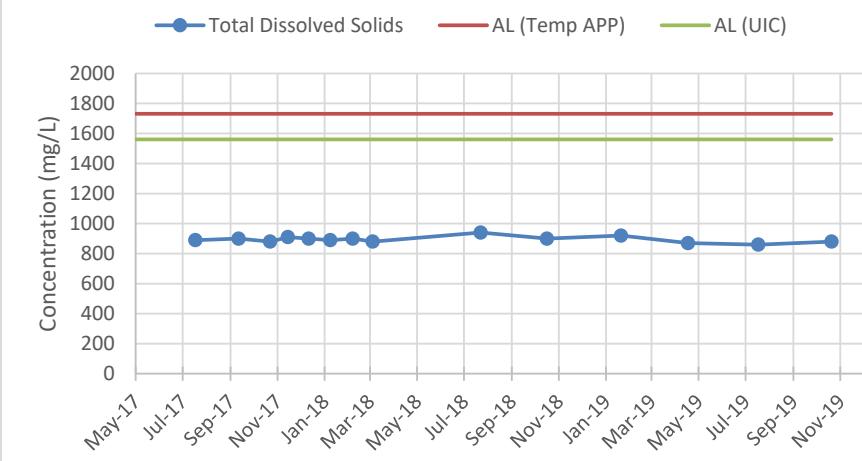
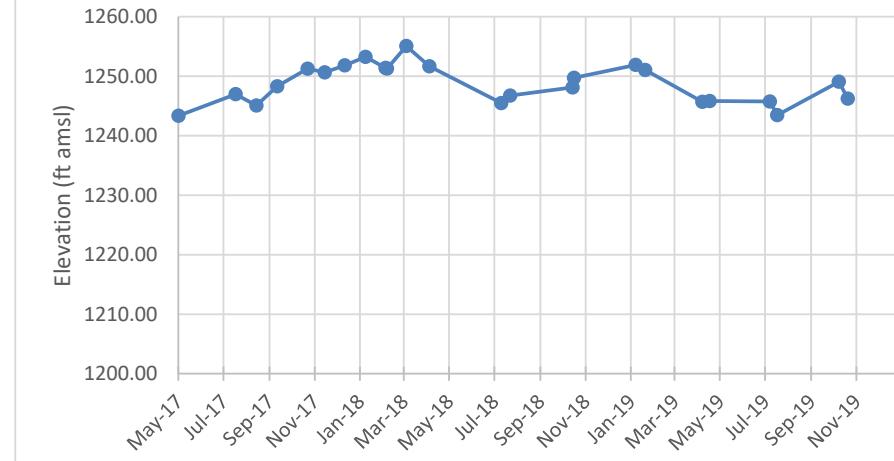


Figure 6f. Groundwater Elevation



Notes:

Historical outliers removed from graphs for visual representation, but are maintained in the dataset.

AL = Alert level

APP = Aquifer Protection Permit

AQL = Aquifer Quality Limit

Temp APP = Temporary APP No P-101704

UIC = Underground Injection Control

UIC = UIC Permit No. R9UIC-AZ3-FY11-1

M54-O QUARTERLY CONCENTRATION GRAPHS

Figure 7a. Magnesium

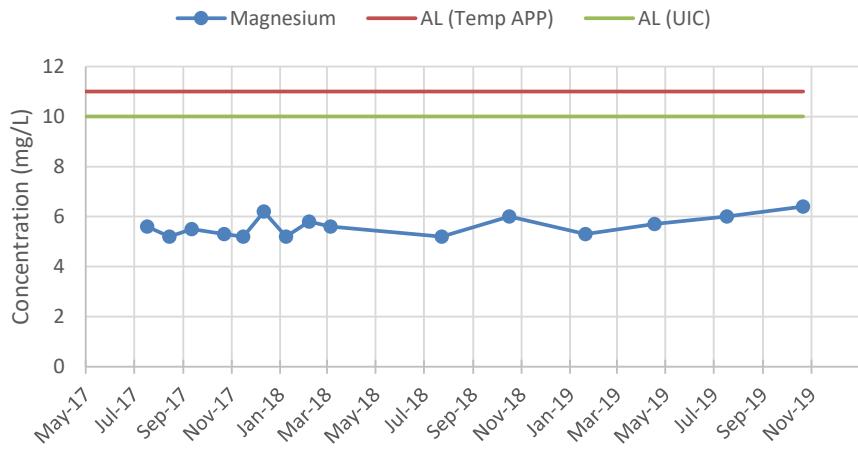


Figure 7b. Fluoride

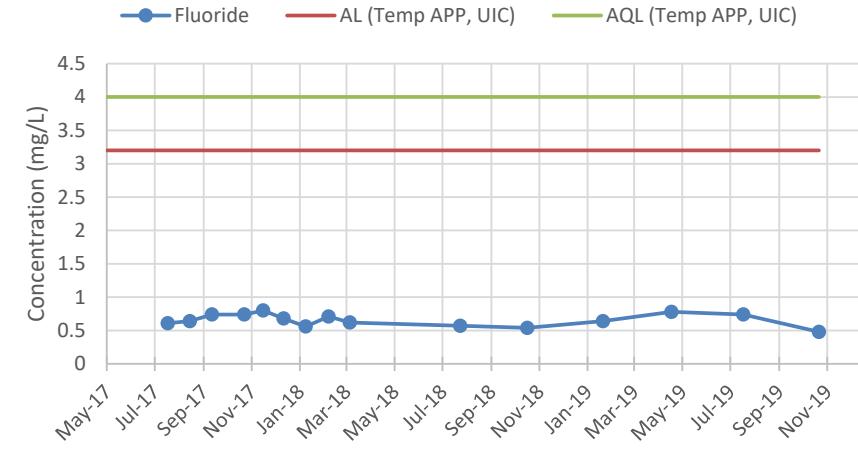


Figure 7c. pH (Field)

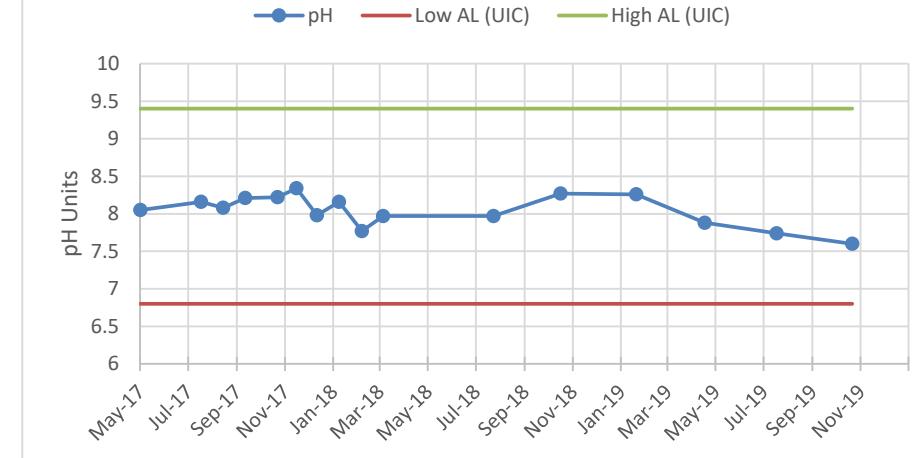


Figure 7d. Sulfate

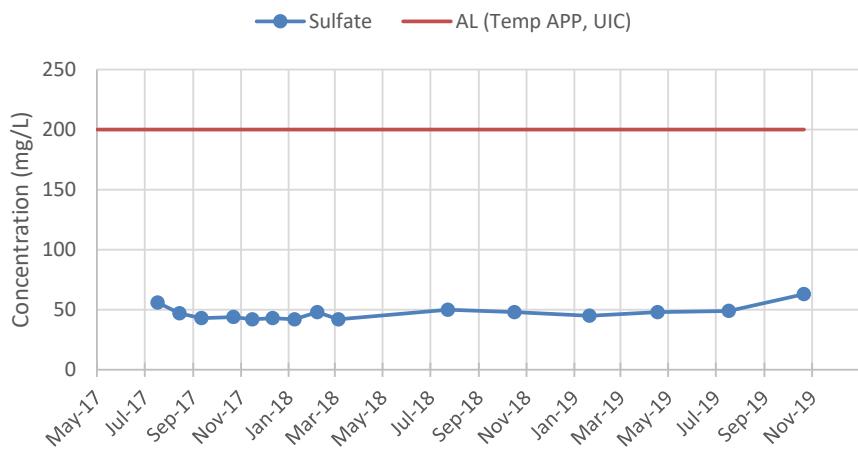


Figure 7e. Total Dissolved Solids

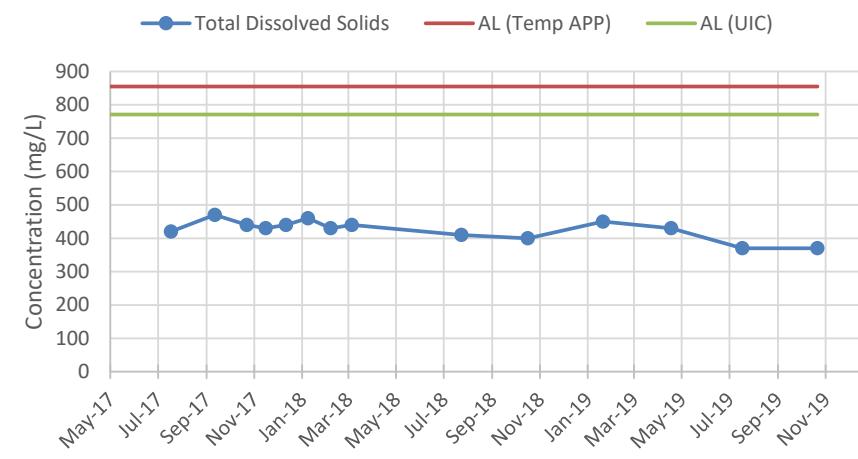
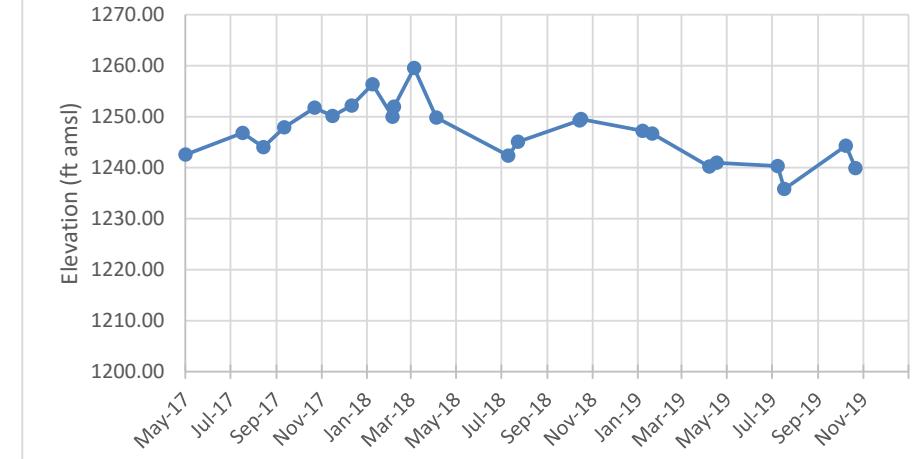


Figure 7f. Groundwater Elevation



Notes:

AL = Alert level

APP = Aquifer Protection Permit

AQL = Aquifer Quality Limit

Temp APP = Temporary APP No P-101704

UIC = Underground Injection Control

UIC = UIC Permit No. R9UIC-AZ3-FY11-1

M55-UBF QUARTERLY CONCENTRATION GRAPHS

Figure 8a. Magnesium

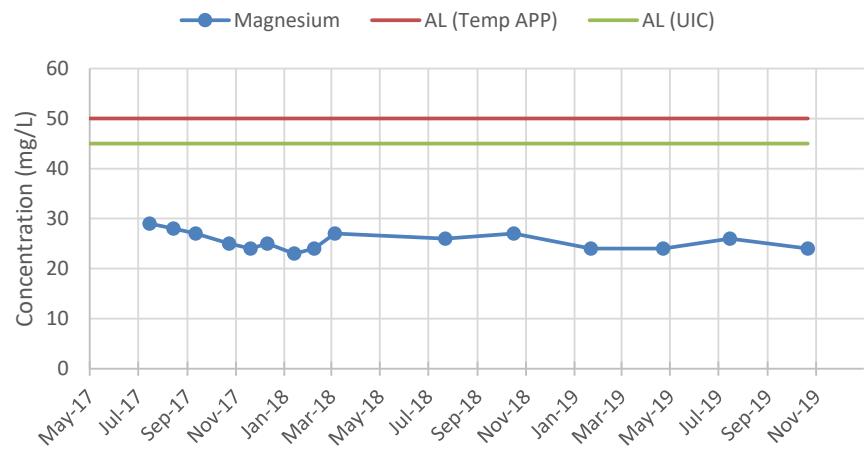


Figure 8b. Fluoride

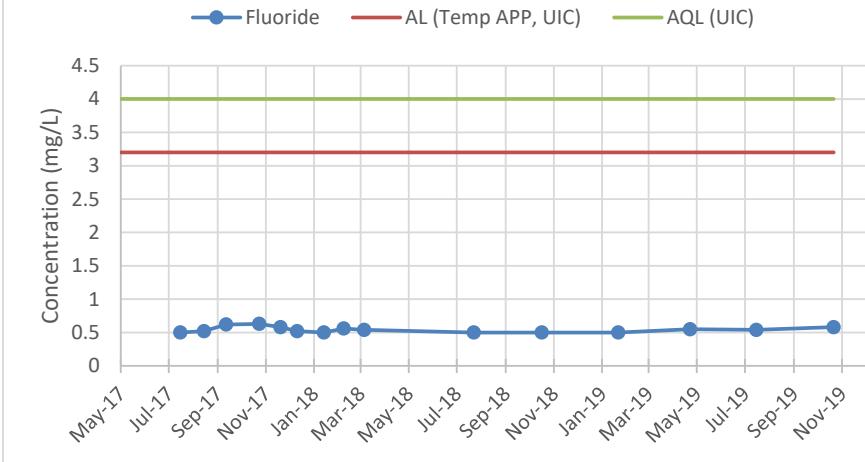


Figure 8c. pH (Field)

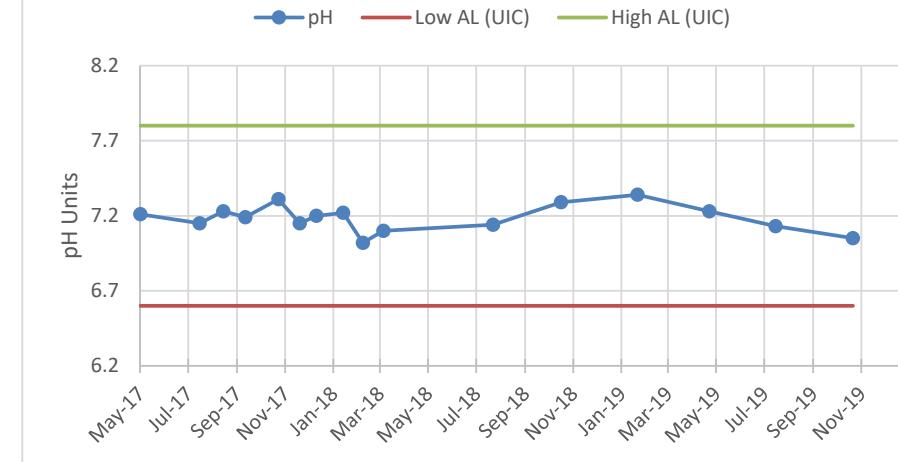


Figure 8d. Sulfate

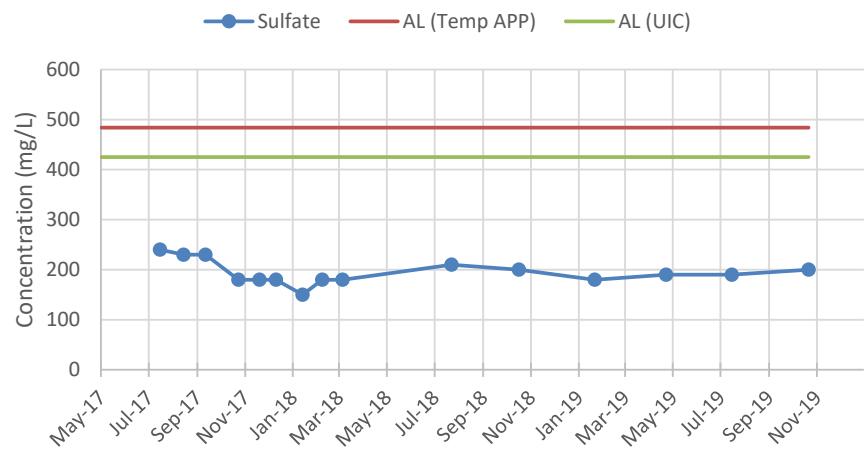


Figure 8e. Total Dissolved Solids

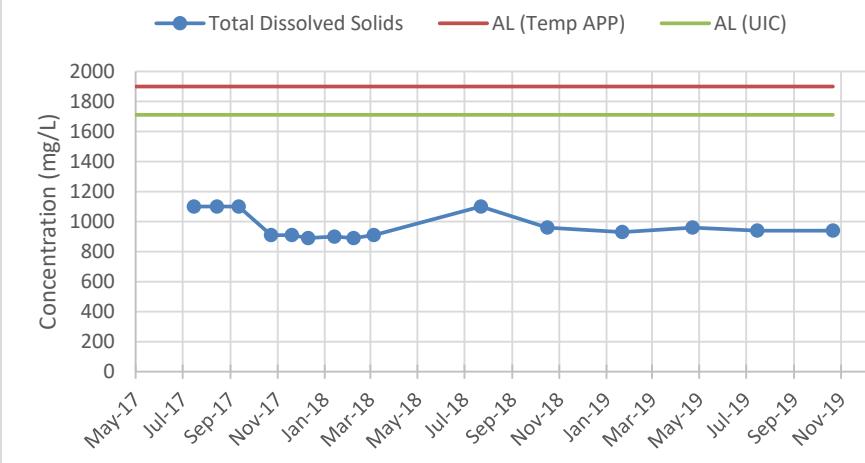
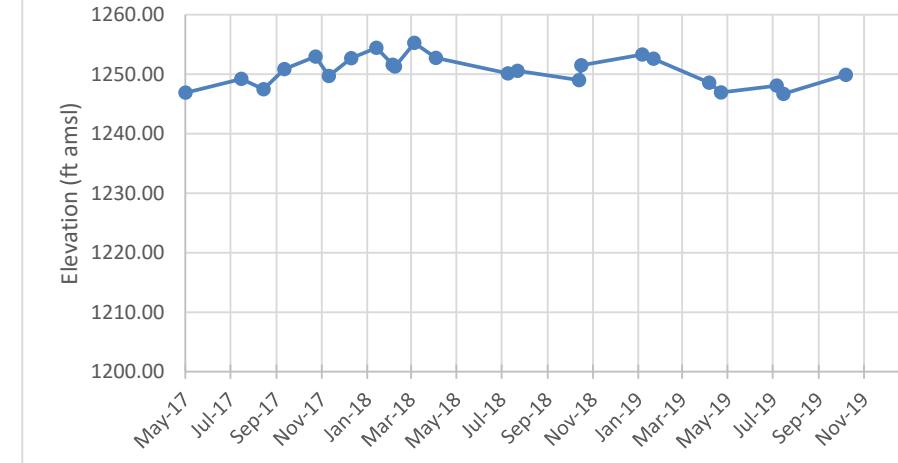


Figure 8f. Groundwater Elevation



Notes:

AL = Alert level
 APP = Aquifer Protection Permit
 AQL = Aquifer Quality Limit
 Temp APP = Temporary APP No P-101704
 UIC = Underground Injection Control
 UIC = UIC Permit No. R9UIC-AZ3-FY11-1

M56-LBF QUARTERLY CONCENTRATION GRAPHS

Figure 9a. Magnesium

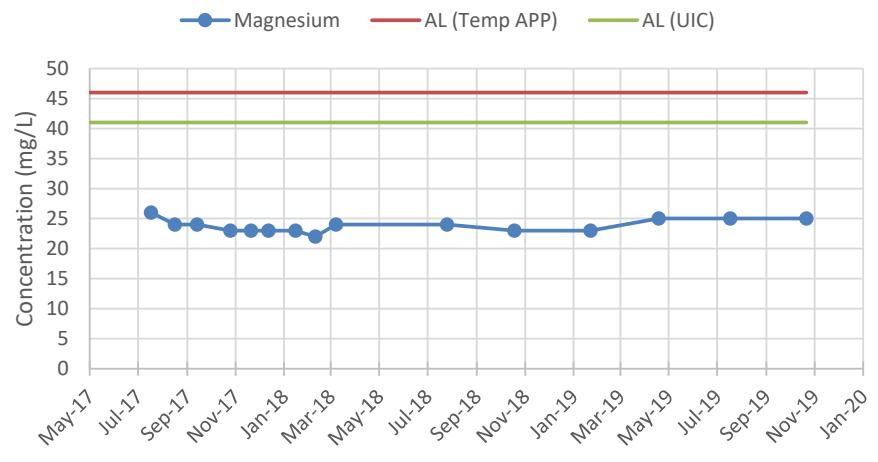


Figure 9b. Fluoride

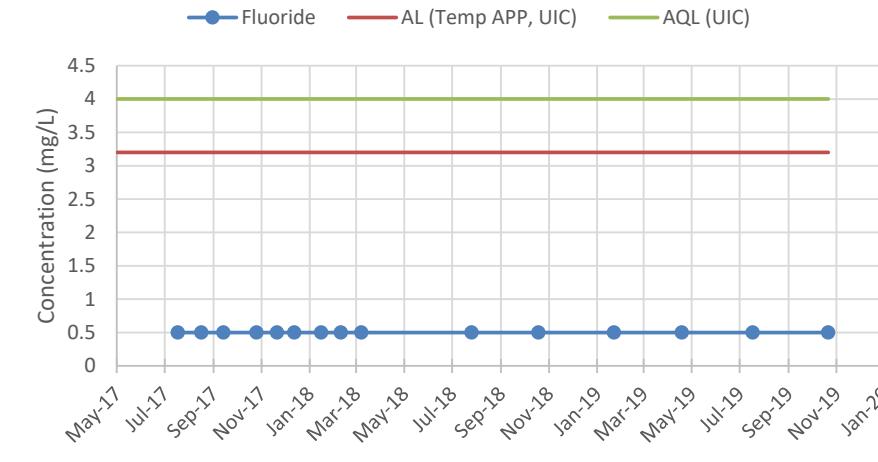


Figure 9c. pH (Field)

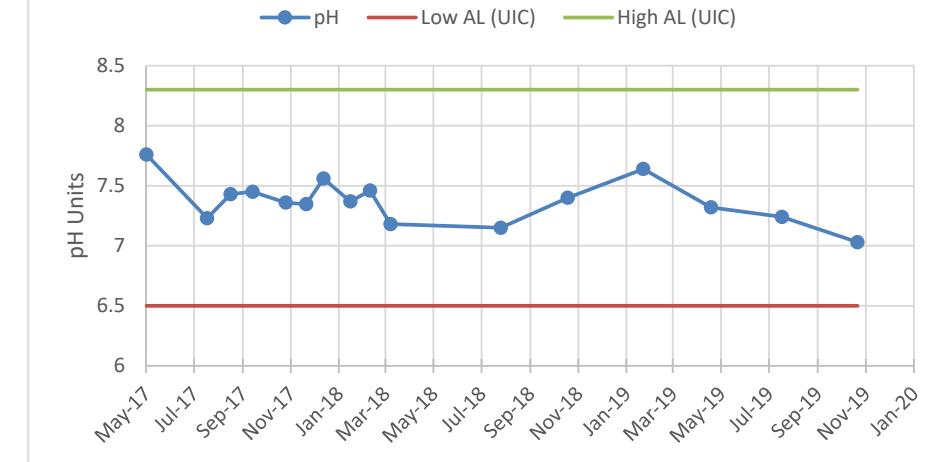


Figure 9d. Sulfate

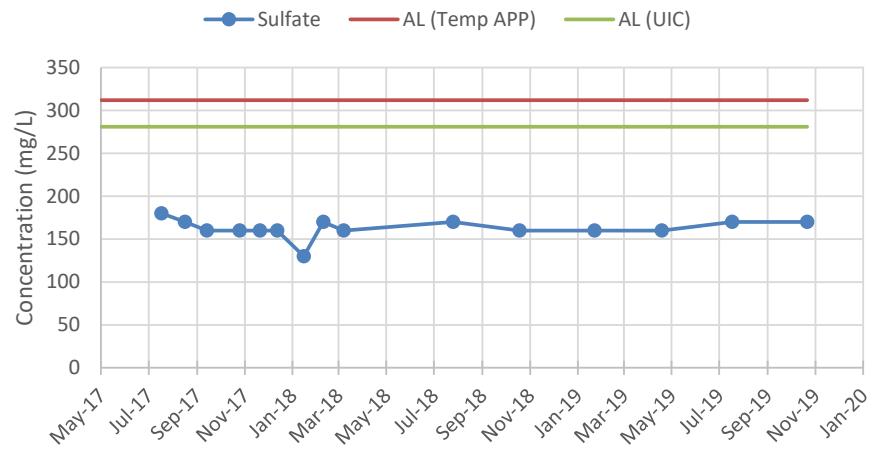


Figure 9e. Total Dissolved Solids

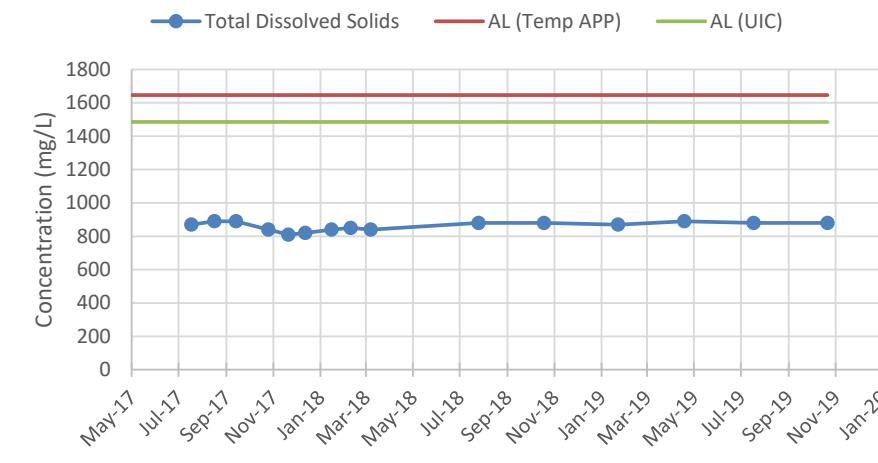
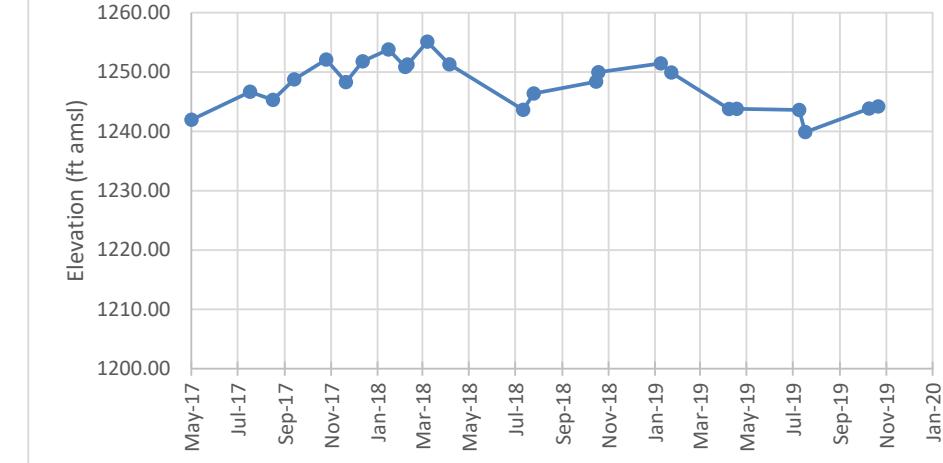


Figure 9f. Groundwater Elevation



Notes:

AL = Alert level

APP = Aquifer Protection Permit

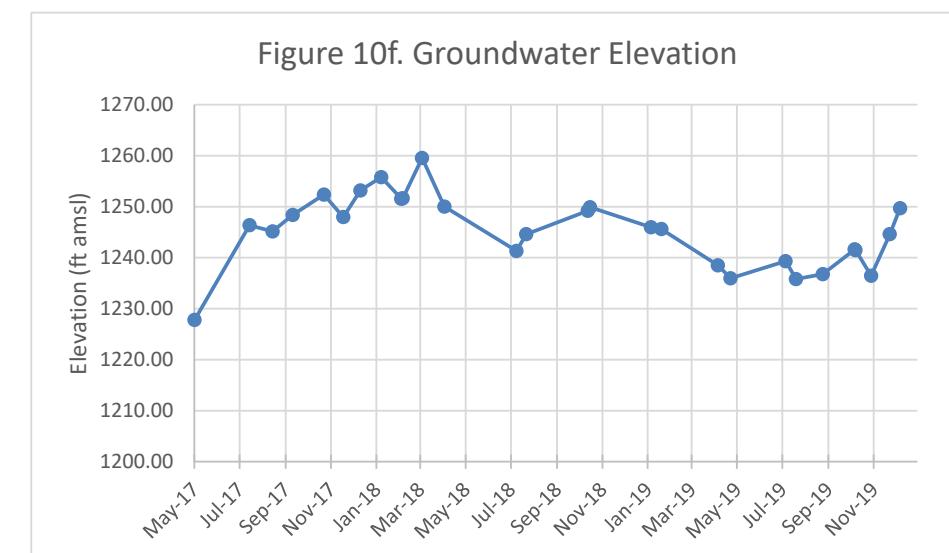
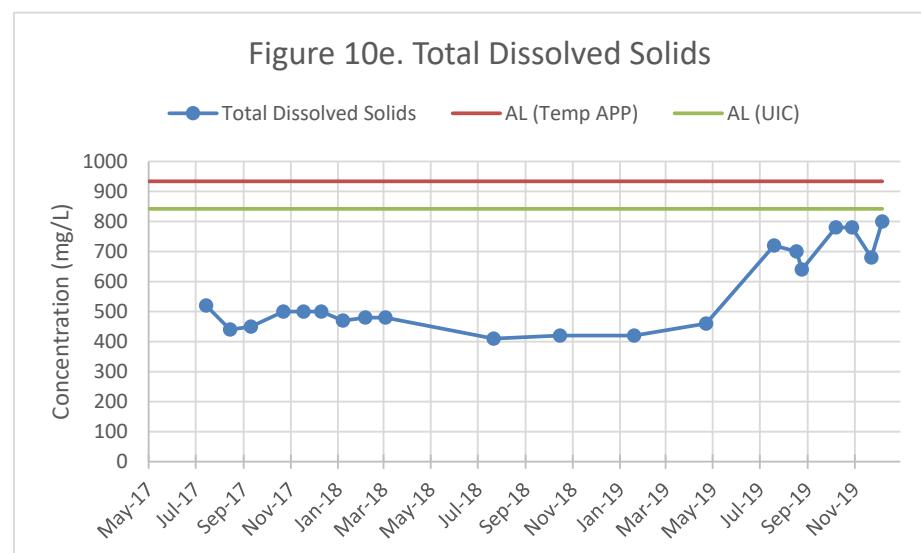
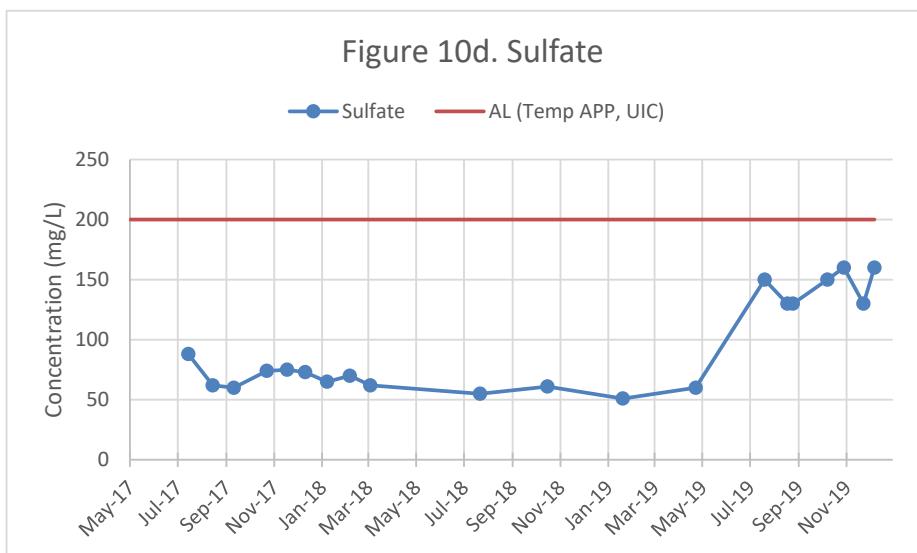
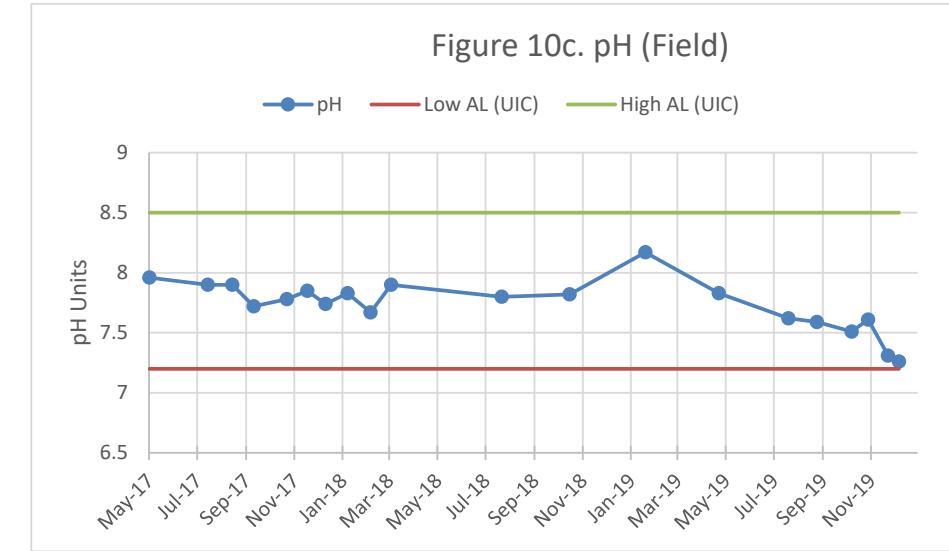
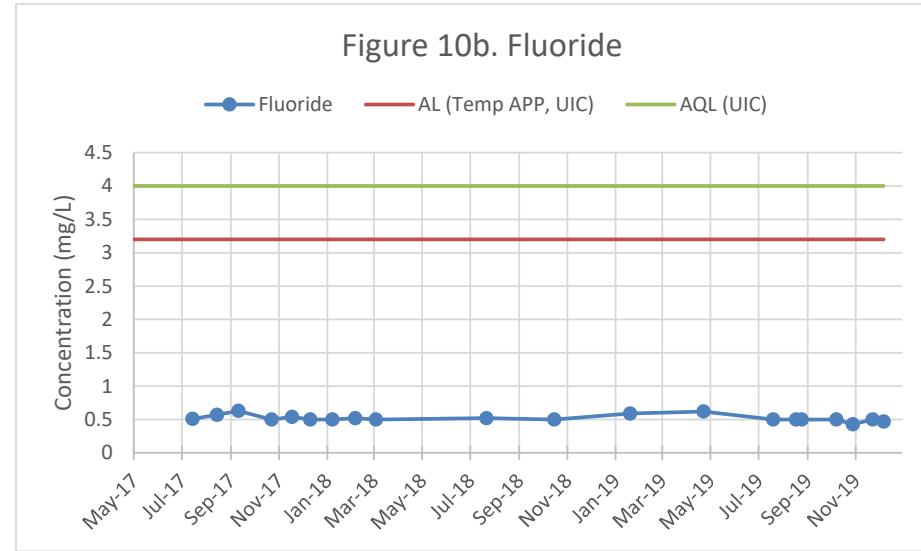
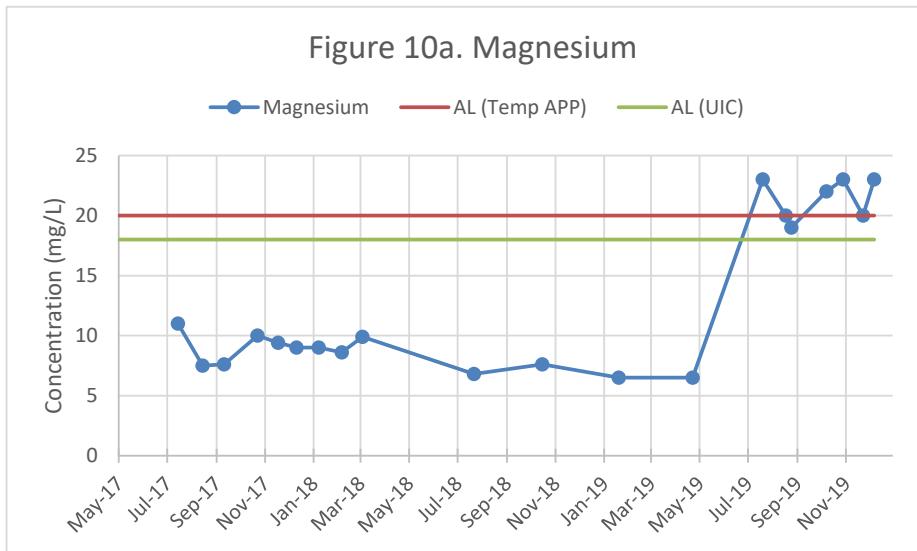
AQL = Aquifer Quality Limit

Temp APP = Temporary APP No P-101704

UIC = Underground Injection Control

UIC = UIC Permit No. R9UIC-AZ3-FY11-1

M57-O QUARTERLY CONCENTRATION GRAPHS



Notes:

AL = Alert level
 APP = Aquifer Protection Permit
 AQL = Aquifer Quality Limit
 Temp APP = Temporary APP No P-101704
 UIC = Underground Injection Control
 UIC = UIC Permit No. R9UIC-AZ3-FY11-1

M58-O QUARTERLY CONCENTRATION GRAPHS

Figure 11a. Magnesium

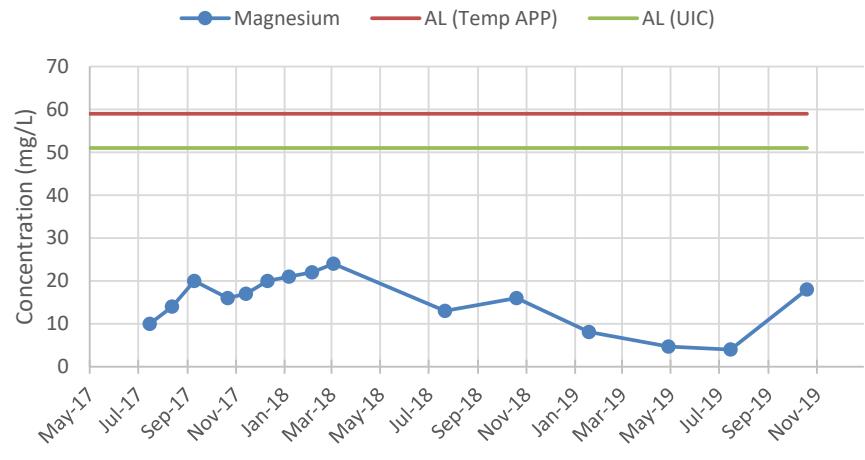


Figure 11b. Fluoride

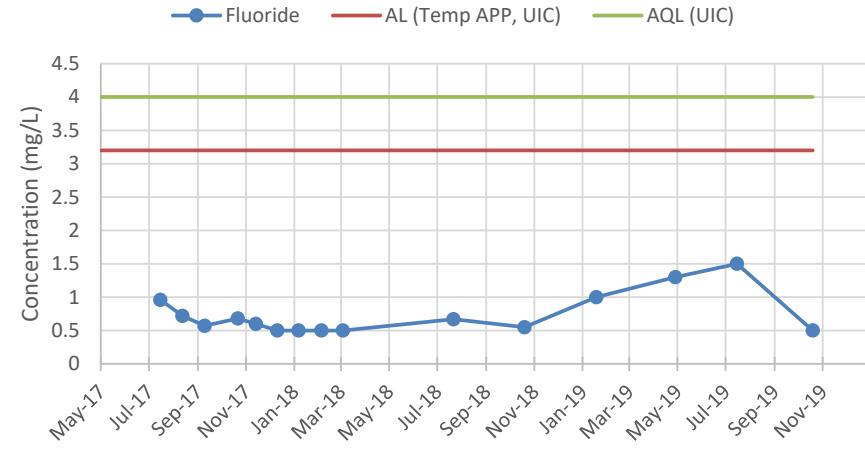


Figure 11c. pH (Field)

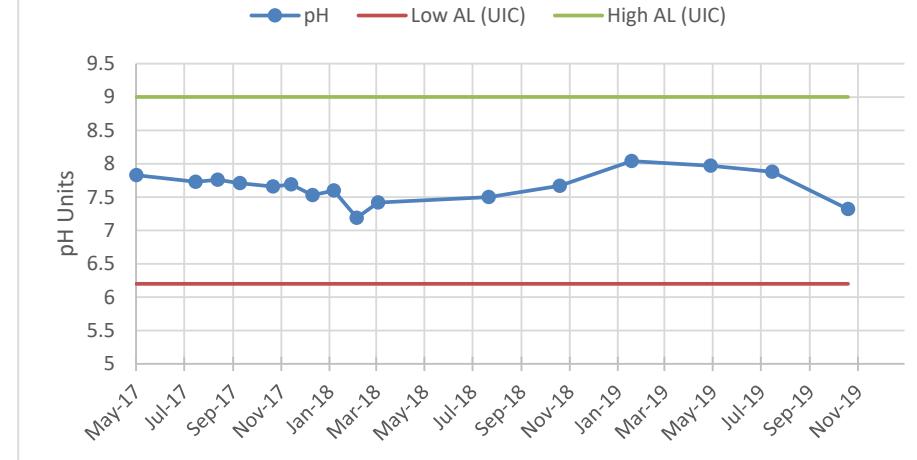


Figure 11d. Sulfate

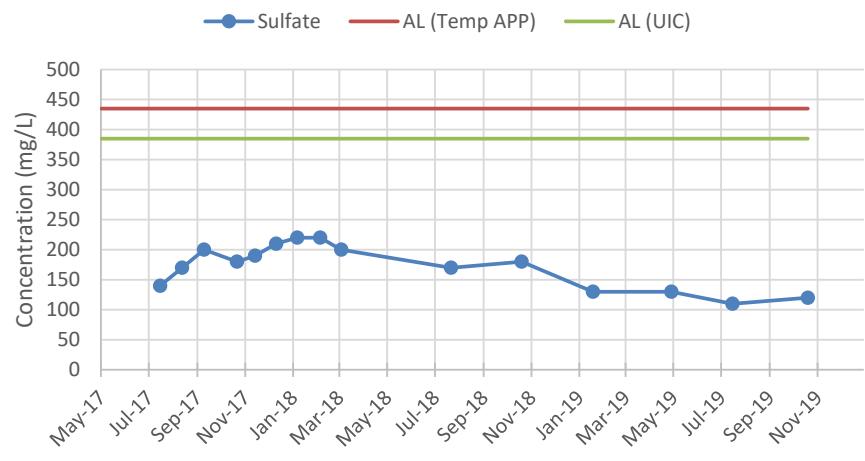


Figure 11e. Total Dissolved Solids

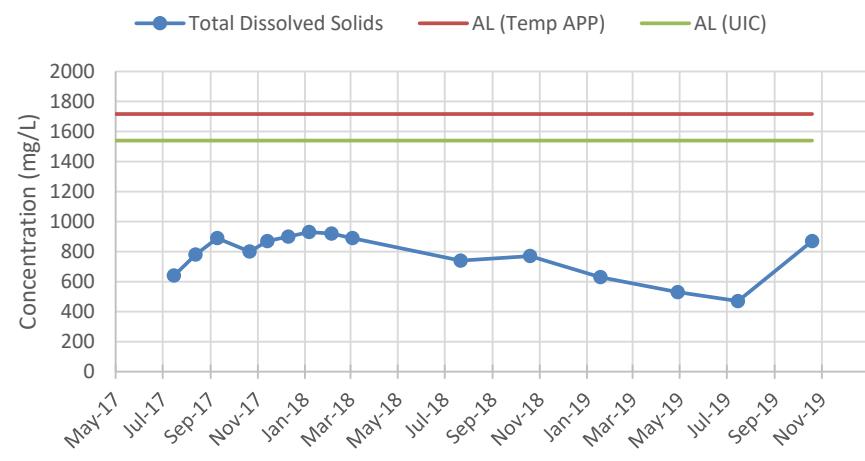
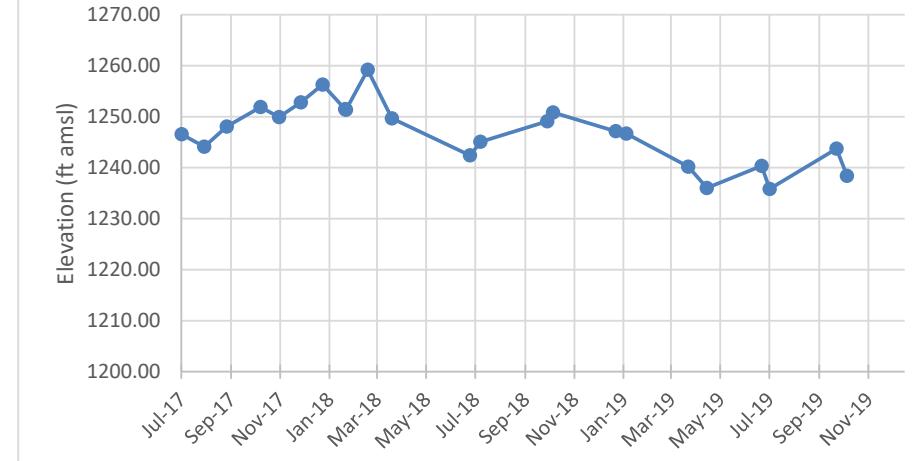


Figure 11f. Groundwater Elevation



Notes:

- AL = Alert level
- APP = Aquifer Protection Permit
- AQL = Aquifer Quality Limit
- Temp APP = Temporary APP No P-101704
- UIC = Underground Injection Control
- UIC = UIC Permit No. R9UIC-AZ3-FY11-1

M59-O QUARTERLY CONCENTRATION GRAPHS

Figure 12a. Magnesium

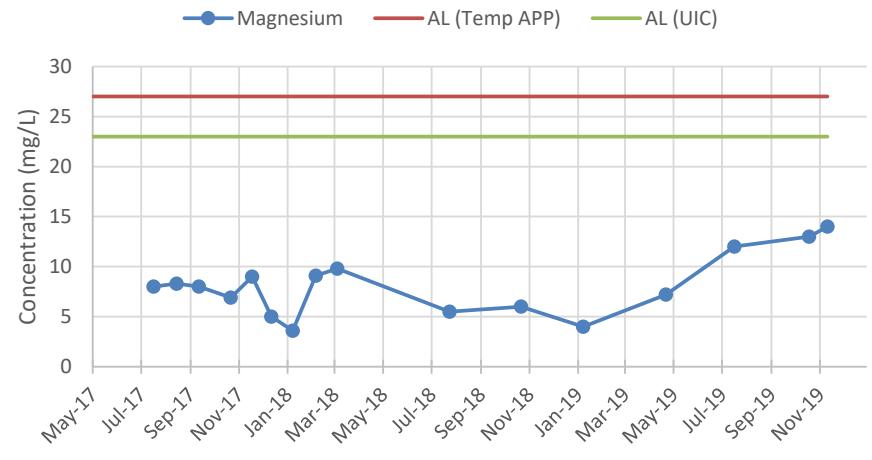


Figure 12b. Fluoride

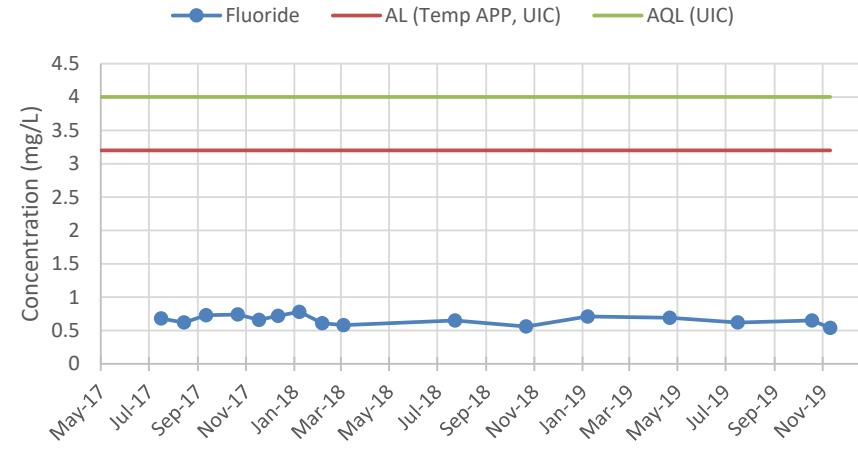


Figure 12c. pH (Field)

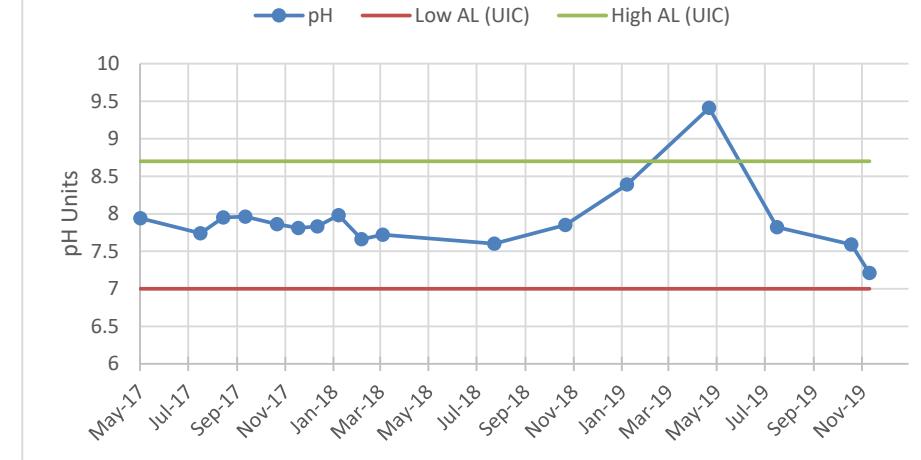


Figure 12d. Sulfate

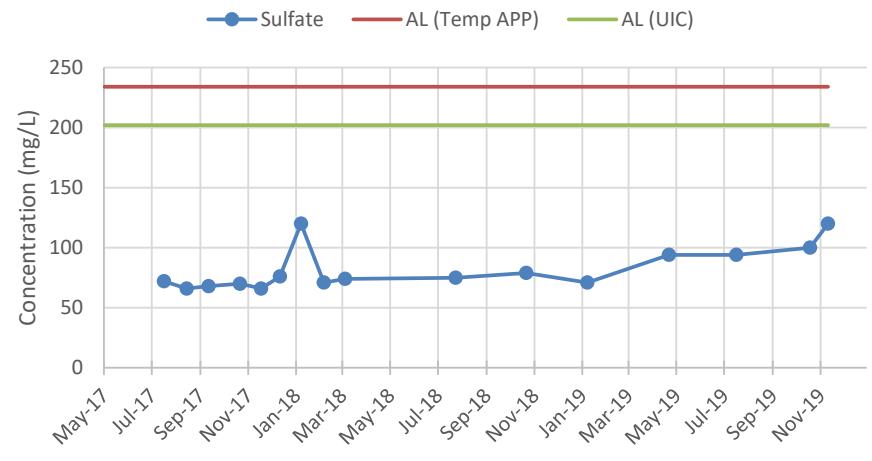


Figure 12e. Total Dissolved Solids

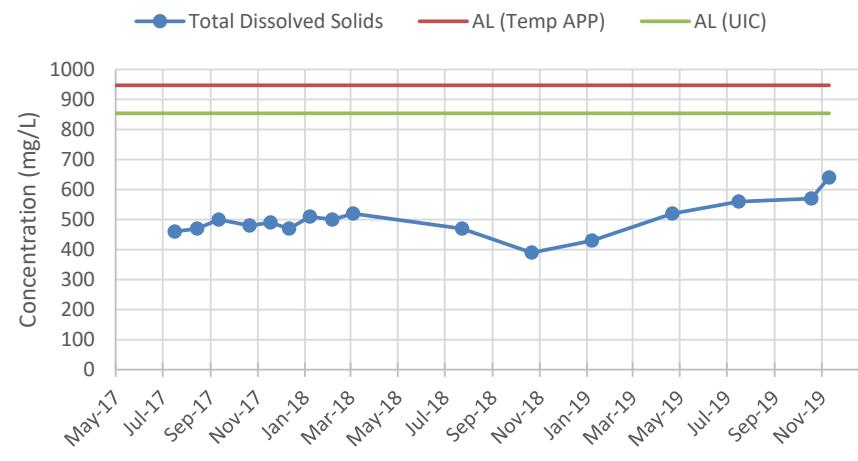
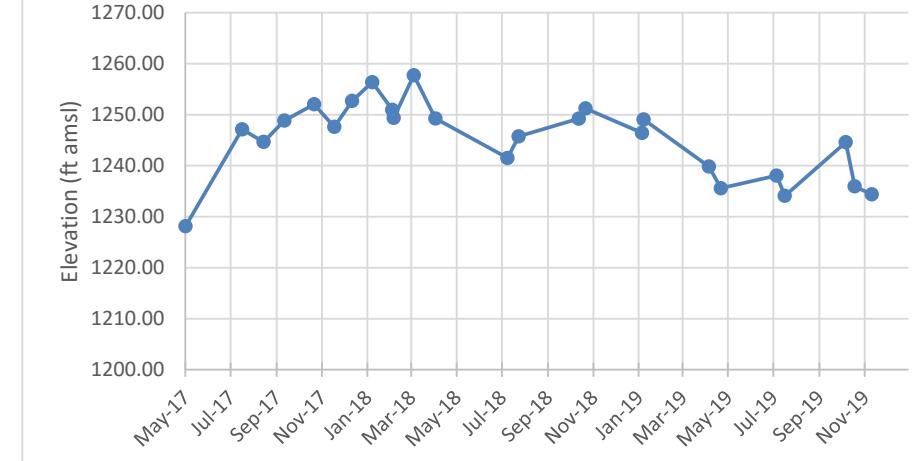


Figure 12f. Groundwater Elevation



Notes:

- AL = Alert level
- APP = Aquifer Protection Permit
- AQL = Aquifer Quality Limit
- Temp APP = Temporary APP No P-101704
- UIC = Underground Injection Control
- UIC = UIC Permit No. R9UIC-AZ3-FY11-1

M60-O QUARTERLY CONCENTRATION GRAPHS

Figure 13a. Magnesium

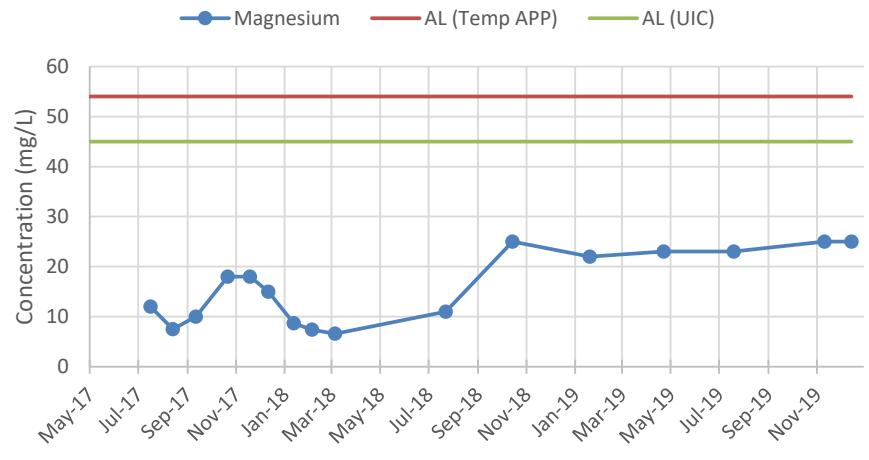


Figure 13b. Fluoride

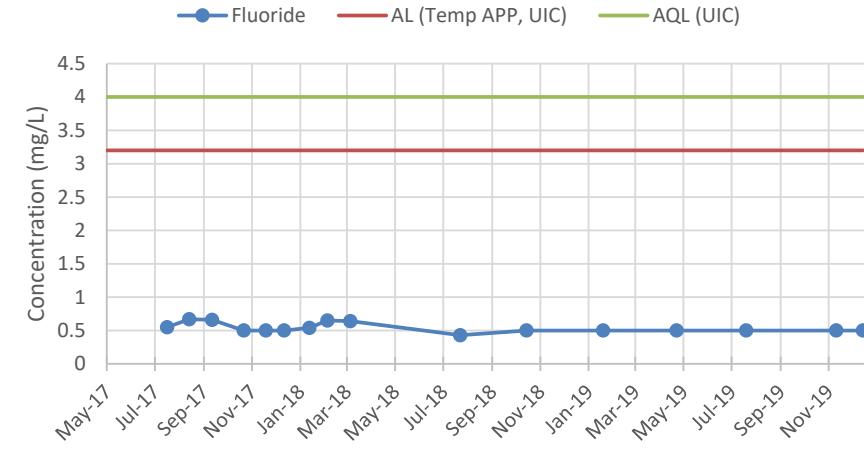


Figure 13c. pH (Field)

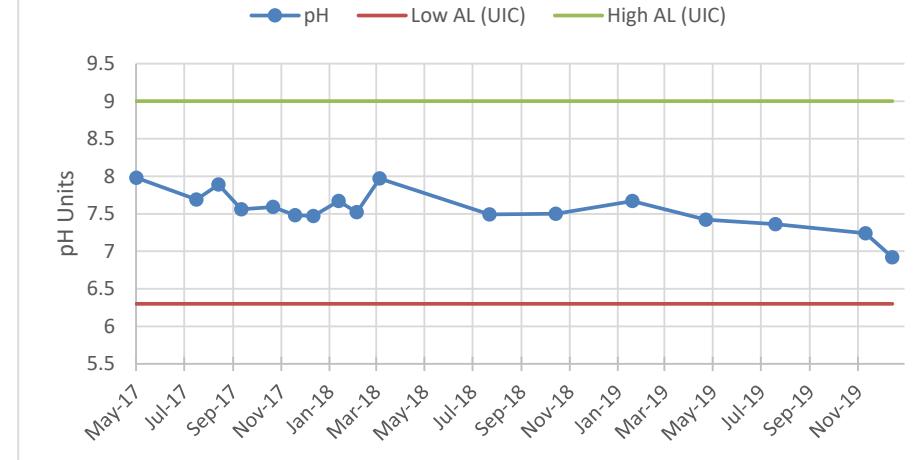


Figure 13d. Sulfate

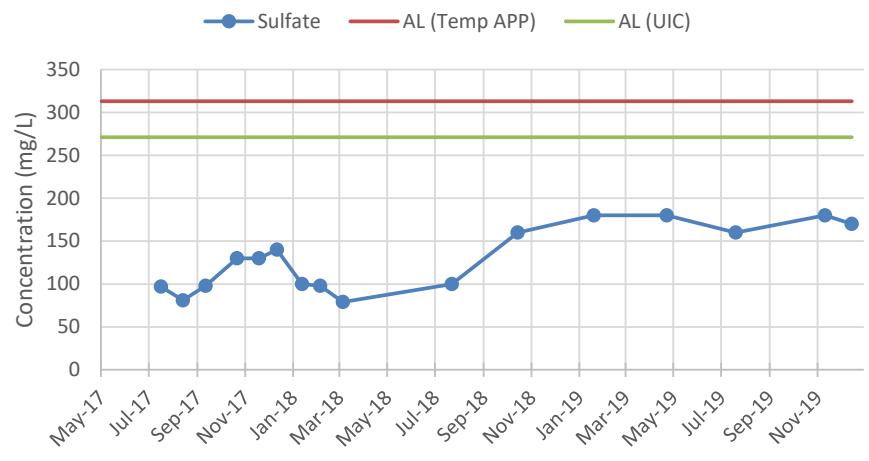


Figure 13e. Total Dissolved Solids

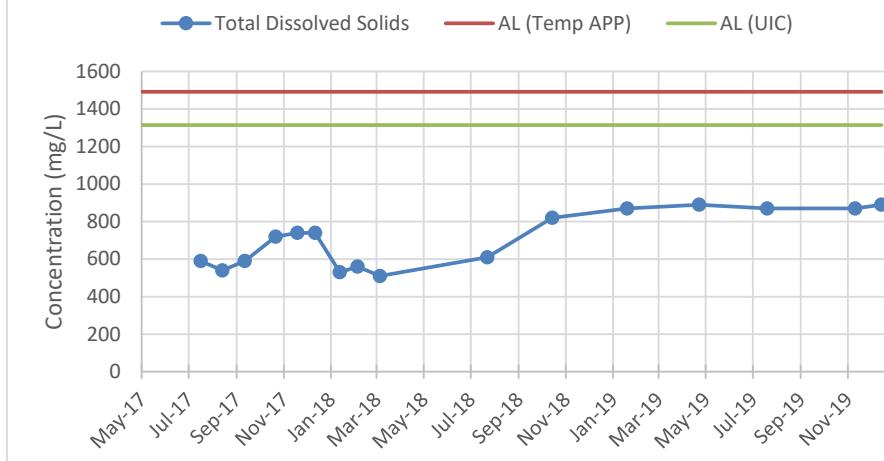
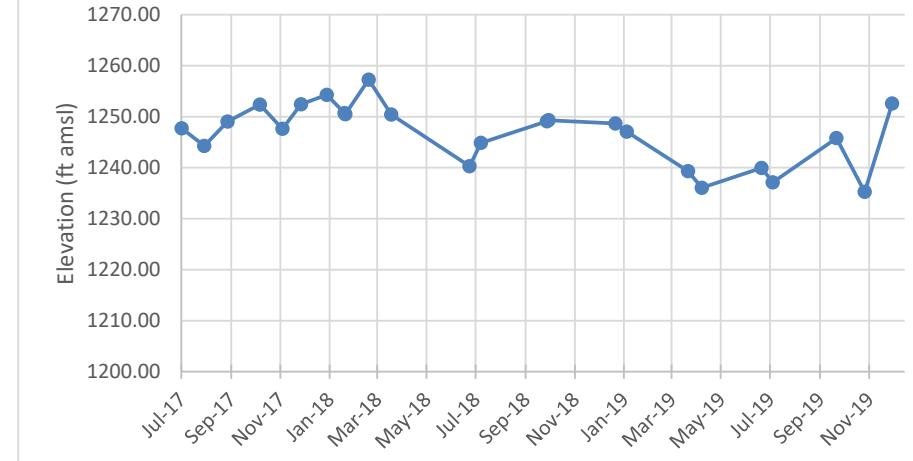


Figure 13f. Groundwater Elevation



Notes:

AL = Alert level

APP = Aquifer Protection Permit

AQL = Aquifer Quality Limit

Temp APP = Temporary APP No P-101704

UIC = Underground Injection Control

UIC = UIC Permit No. R9UIC-AZ3-FY11-1

M61-LBF QUARTERLY CONCENTRATION GRAPHS

Figure 14a. Magnesium

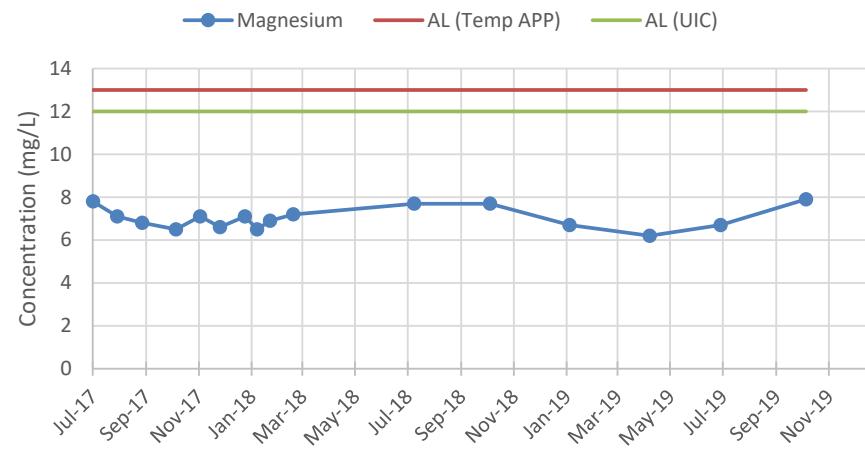


Figure 14b. Fluoride

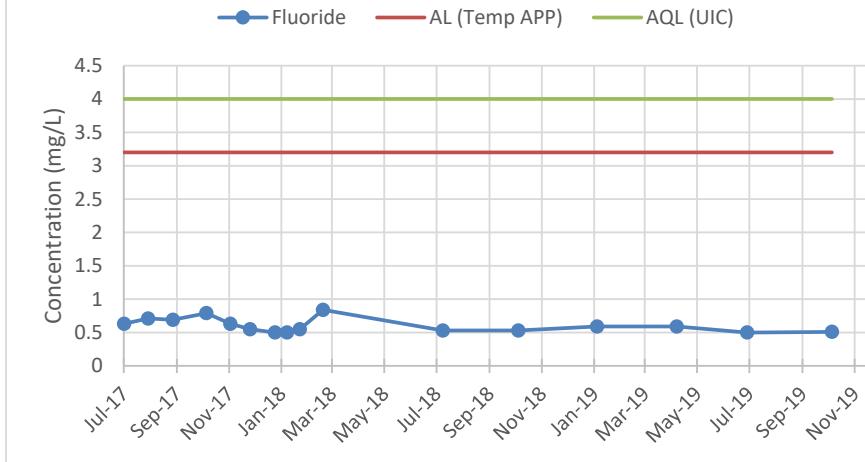


Figure 14c. pH (Field)

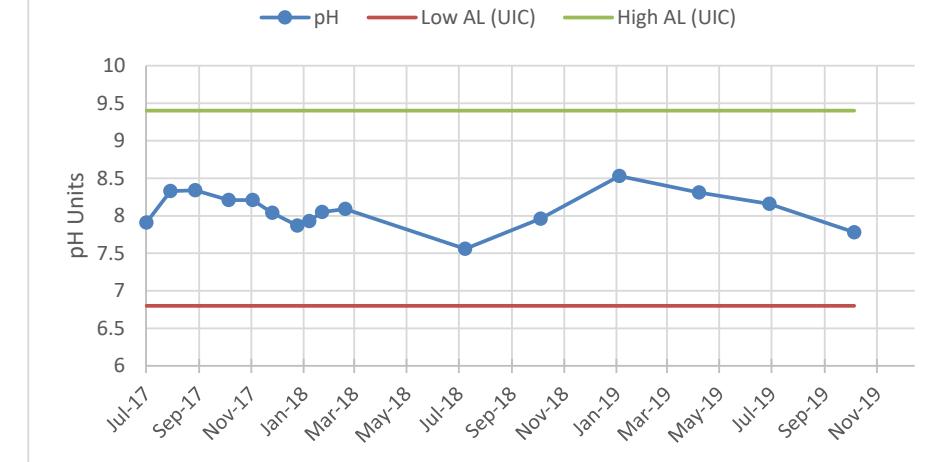


Figure 14d. Sulfate

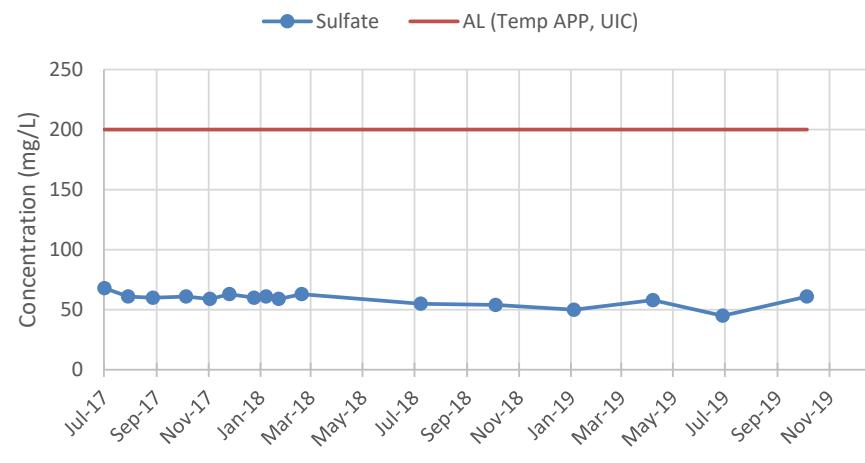


Figure 14e. Total Dissolved Solids

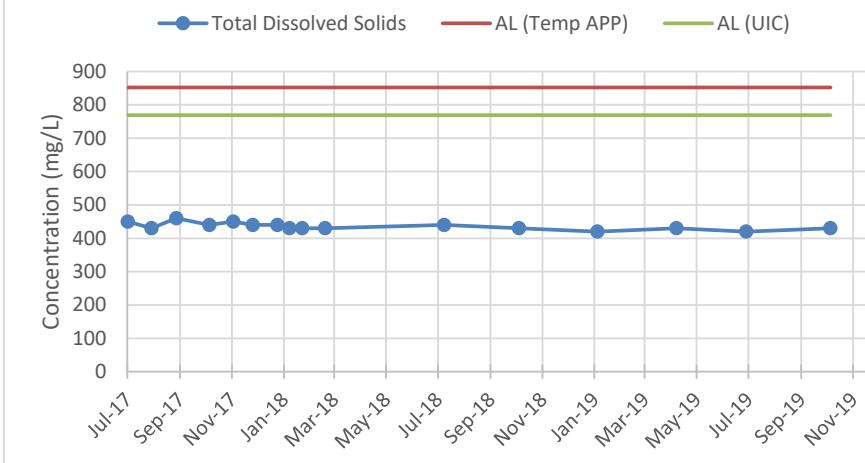
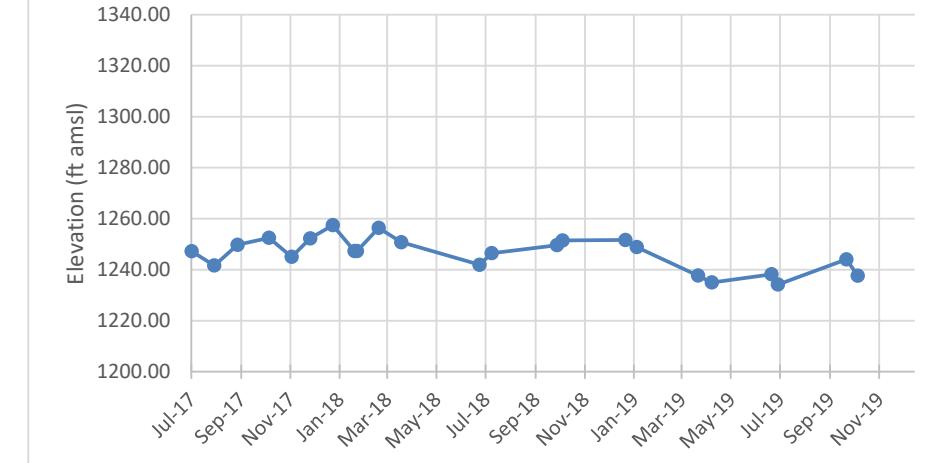


Figure 14f. Groundwater Elevation



Notes:

AL = Alert level

APP = Aquifer Protection Permit

AQL = Aquifer Quality Limit

Temp APP = Temporary APP No P-101704

UIC = Underground Injection Control

UIC = UIC Permit No. R9UIC-AZ3-FY11-1

MW-01-LBF QUARTERLY CONCENTRATION GRAPHS

Figure 15a. Magnesium

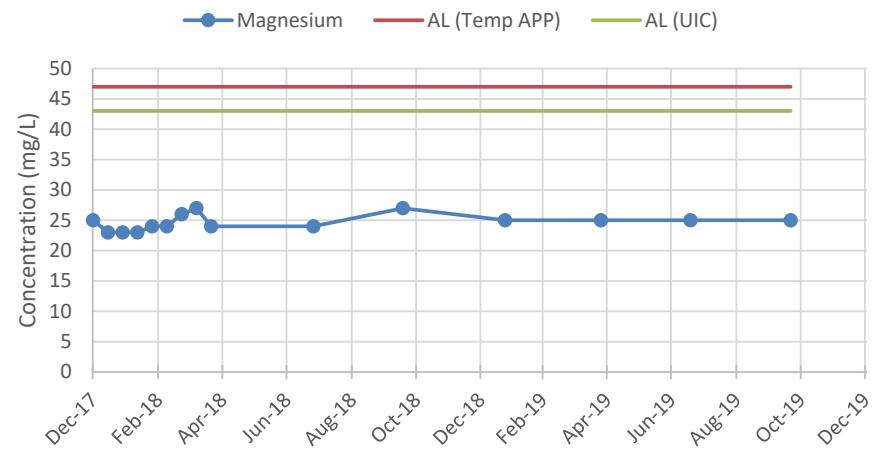


Figure 15b. Fluoride

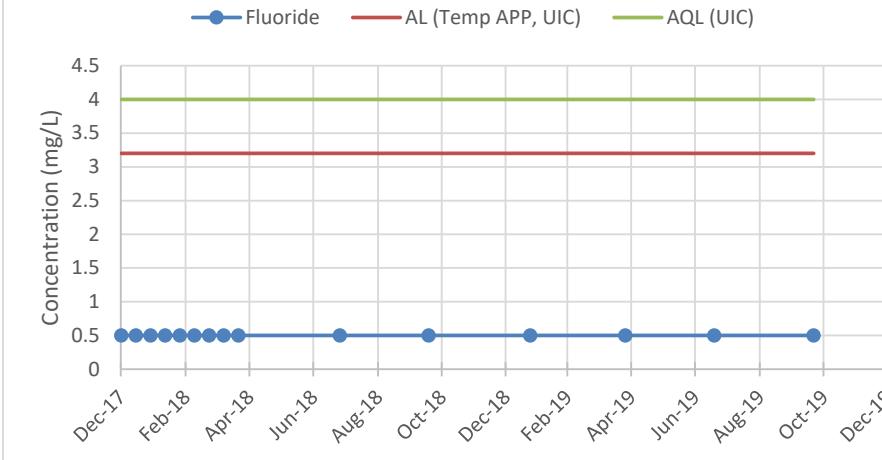


Figure 15c. pH (Field)

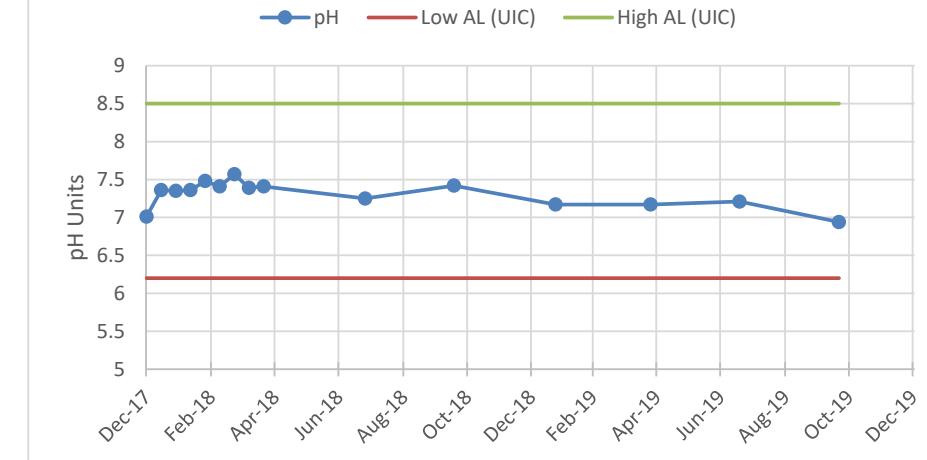


Figure 15d. Sulfate

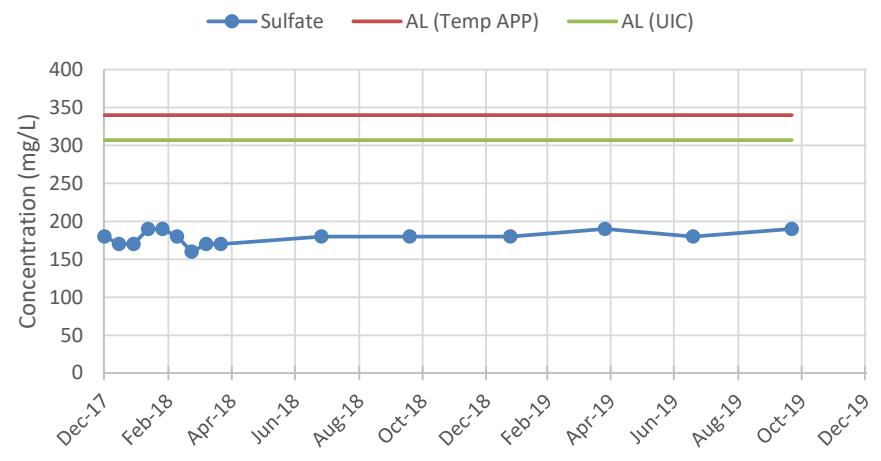


Figure 15e. Total Dissolved Solids

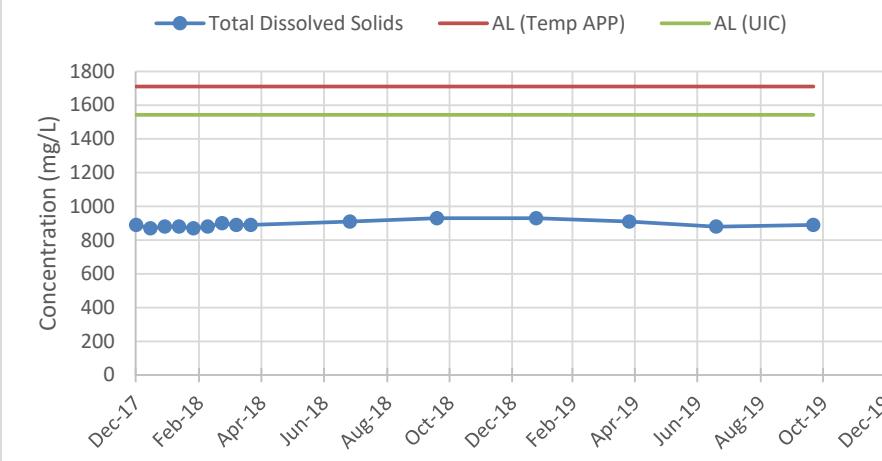
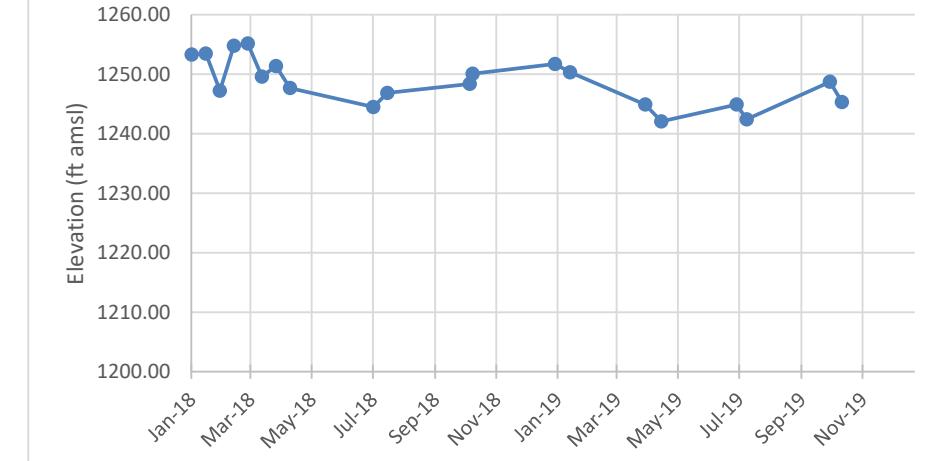


Figure 15f. Groundwater Elevation



Notes:

- AL = Alert level
- APP = Aquifer Protection Permit
- AQL = Aquifer Quality Limit
- Temp APP = Temporary APP No P-101704
- UIC = Underground Injection Control
- UIC = UIC Permit No. R9UIC-AZ3-FY11-1

MW-01-O QUARTERLY CONCENTRATION GRAPHS

Figure 16a. Magnesium

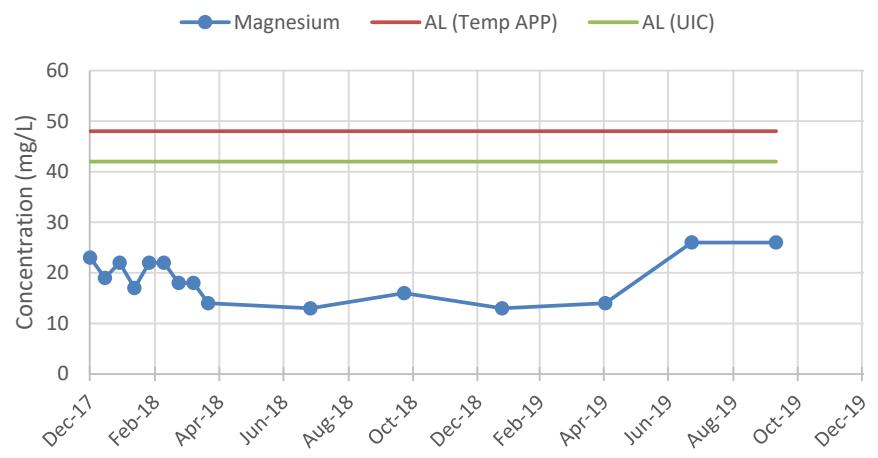


Figure 16b. Fluoride

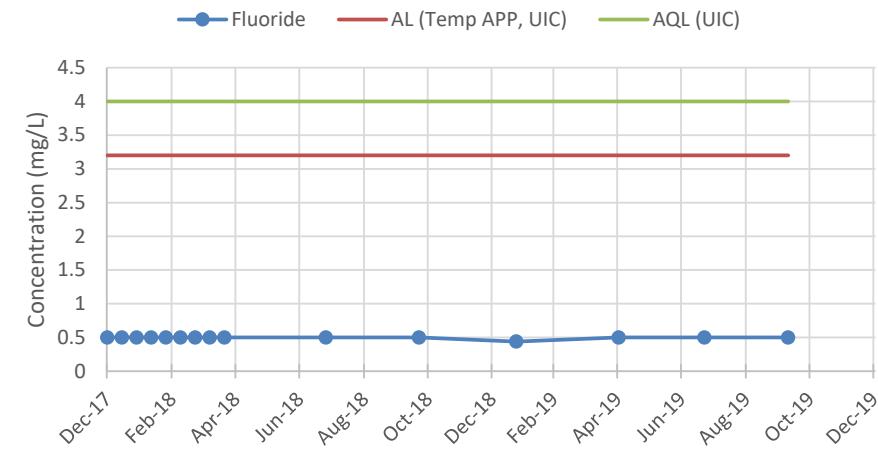


Figure 16c. pH (Field)

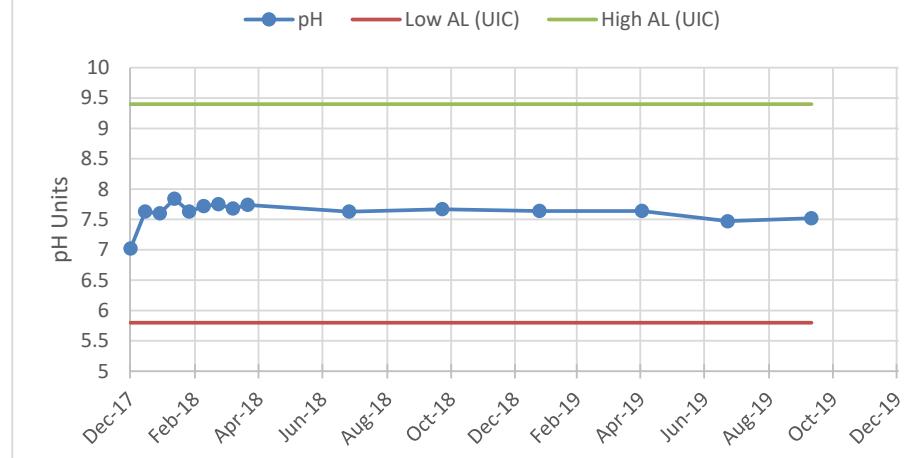


Figure 16d. Sulfate

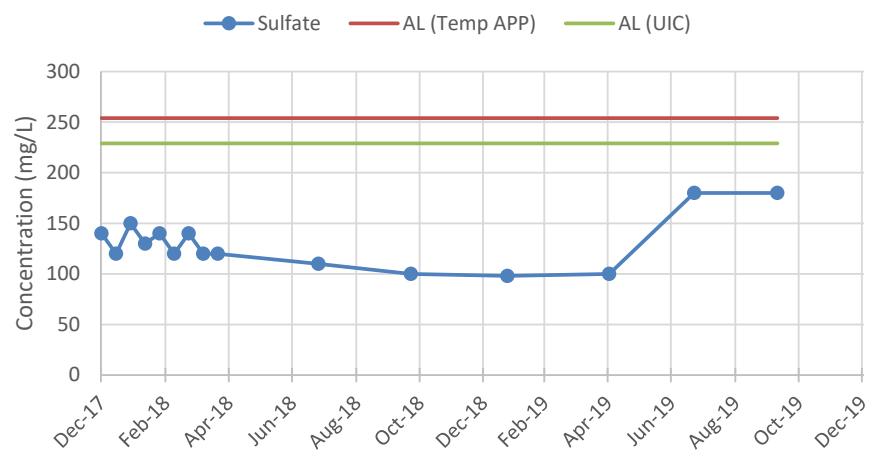


Figure 16e. Total Dissolved Solids

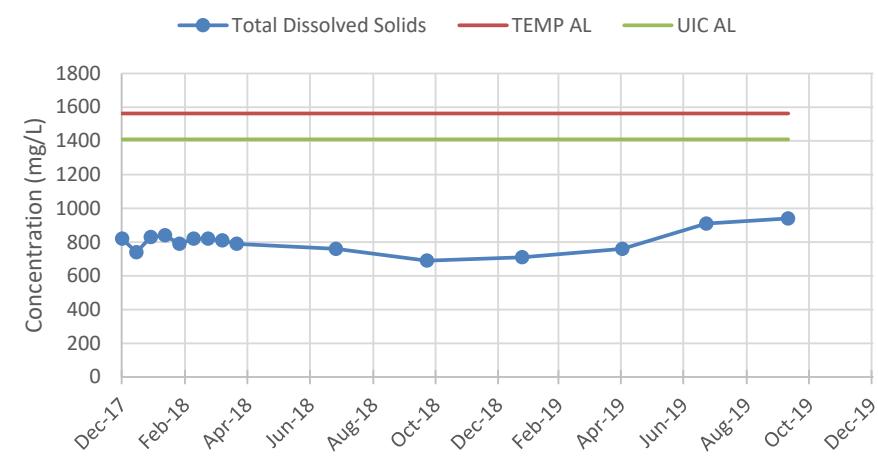
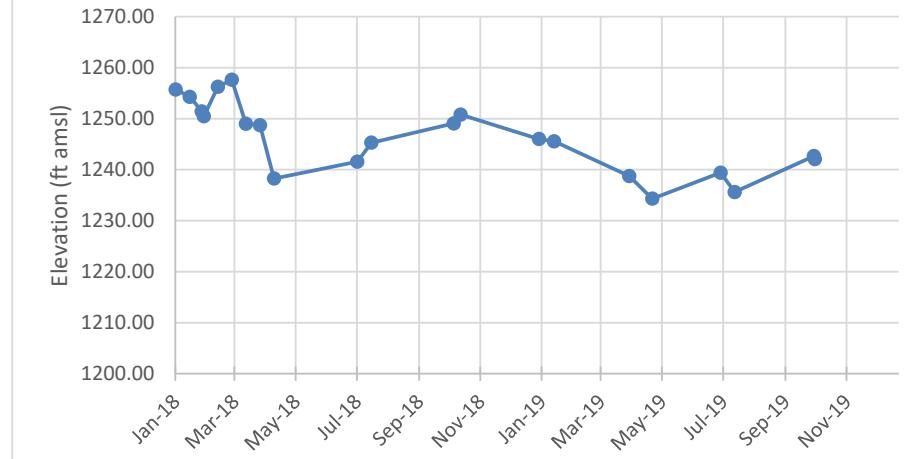


Figure 16f. Groundwater Elevation



Notes:

AL = Alert level
 APP = Aquifer Protection Permit
 AQL = Aquifer Quality Limit
 Temp APP = Temporary APP No P-101704
 UIC = Underground Injection Control
 UIC = UIC Permit No. R9UIC-AZ3-FY11-1

ATTACHMENT 6B

Well Details and Water Level Elevations

**Q4 2019 TEMPORARY APP AND
UIC MONITORING WELL DETAILS**
FLORENCE COPPER INC.
FLORENCE, ARIZONA

Table 1. Well Details

Well ID	Well Type	ADWR #	Total Well Depth (ft bgs)	Latitude	Longitude	Screened Interval (ft bgs)	Aquifer Unit
M14-GL	POC	55-549172	838	33°03'4.0"N	111°26'15.77"W	778-838	LBFU
M15-GU	POC	55-547813	594	33°03'4.04"N	111°26'16.40"W	554-594	LBFU
M22-O	POC	55-555831	1,130	33°03'4.53"N	111°26'15.76"W	932-1,130	OXIDE
M23-UBF	POC	55-555824	250	33°03'4.51"N	111°26'16.50"W	210-250	UBFU
M54-LBF	POC	55-226792	629	33°03'7.07"N	111°26'9.29"W	310-629	LBFU
M54-O	POC	55-226798	1,199	33°03'6.91"N	111°26'9.22"W	668-1,199	OXIDE
M52-UBF	POC	55-226788	274	33°03'11.03"N	111°25'24.66"W	200-274	UBFU
M55-UBF	Monitor	55-226797	261	33°03'1.99"N	111°26'6.18"W	240-261	UBFU
M56-LBF	Monitor	55-226795	340	33°03'2.21"N	111°26'6.44"W	320-340	LBFU
M57-O	Monitor	55-226790	1,200	33°03'1.88"N	111°26'8.39"W	523-1,200	OXIDE
M58-O	Monitor	55-226794	1,200	33°03'5.20"N	111°26'4.94"W	594-1,200	OXIDE
M59-O	Monitor	55-226791	1,200	33°03'1.58"N	111°26'2.25"W	534-1,200	OXIDE
M60-O	Monitor	55-226796	1,201	33°02'58.70"N	111°26'5.78"W	444-1,201	OXIDE
M61-LBF	Monitor	55-226799	630	33°03'0.85"N	111°25'58.92"W	429-630	LBFU
MW-01-LBF	Operational	55-226789	440	33°03'02.9442"N	111°26'07.1046"W	330-440	LBFU
MW-01-O	Operational	55-226793	1,200	33°03'03.045"N	111°26'06.9786"W	500-1,200	OXIDE
New Wells Constructed or Replaced							
M57R-O	Monitor	55-229751	1,200	33°03'0.31"N	111°26'8.16"W	550-1,200	OXIDE

Notes:

ADWR = Arizona Department of Water Resources

ft bgs = feet below ground surface

LBFU = lower basin fill unit

POC = point of compliance

UBFU = upper basin fill unit

SUMMARY OF QUARTERLY WATER LEVELS

FLORENCE COPPER INC.

FLORENCE, ARIZONA

Table 2. Water Levels

Location ID	Date	Depth to Water	Description of Measuring Point	Elevation of Measuring Point	Water Level Elevation
		(feet)		(feet amsl)	(feet amsl)
M14-GL	10/09/2019	229.18	TOC	1477.12	1247.94
M14-GL	10/16/2019	234.82	TOC	1477.12	1242.30
M15-GU	10/09/2019	227.44	TOC	1476.53	1249.09
M15-GU	10/16/2019	231.10	TOC	1476.53	1245.43
M22-O	10/09/2019	231.38	TOM	1478.58	1247.20
M22-O	10/15/2019	236.16	TOM	1478.58	1242.42
M23-UBF	10/09/2019	222.11	TOM	1477.61	1255.50
M23-UBF	10/16/2019	221.56	TOM	1477.61	1256.05
M52-UBF	10/09/2019	232.35	TOC	1485.04	1252.69
M52-UBF	10/21/2019	233.04	TOC	1485.04	1252.00
M54-LBF	10/09/2019	232.85	TOC	1481.92	1249.07
M54-LBF	10/21/2019	235.68	TOC	1481.92	1246.24
M54-O	10/09/2019	238.16	TOC	1482.47	1244.31
M54-O	10/22/2019	242.56	TOC	1482.47	1239.91
M55-UBF	10/09/2019	229.25	TOC	1479.14	1249.89
M55-UBF	10/23/2019	NM	TOC	1479.14	NM
M56-LBF	10/09/2019	234.80	TOC	1478.65	1243.85
M56-LBF	10/21/2019	234.45	TOC	1478.65	1244.20
M57-O	10/09/2019	237.08	TOC	1478.71	1241.63
M57-O	10/10/2019	237.22	TOC	1478.71	1241.49
M57-O	10/31/2019	242.24	TOC	1478.71	1236.47
M57-O	11/25/2019	234.10	TOC	1478.71	1244.61
M57-O	12/09/2019	229.00	TOC	1478.71	1249.71
M58-O	10/09/2019	237.35	TOC	1481.08	1243.73
M58-O	10/22/2019	242.69	TOC	1481.08	1238.39
M59-O	10/09/2019	235.58	TOV	1480.19	1244.61
M59-O	10/21/2019	244.25	TOV	1480.19	1235.94
M59-O	11/13/2019	245.81	TOC	1480.19	1234.38
M60-O	10/09/2019	231.56	TOC	1477.36	1245.80
M60-O	11/13/2019	242.11	TOC	1477.36	1235.25
M60-O	12/17/2019	224.78	TOC	1477.36	1252.58
M61-LBF	10/09/2019	236.71	TOC	1480.78	1244.07
M61-LBF	10/23/2019	243.16	TOC	1480.78	1237.62
MW-01-LBF	10/09/2019	230.20	TOC	1478.92	1248.72
MW-01-LBF	10/21/2019	233.62	TOC	1478.92	1245.30
MW-01-O	10/09/2019	236.40	TOC	1479.07	1242.67
MW-01-O	10/10/2019	237.01	TOC	1479.07	1242.06
Mine Shaft	10/09/2019	236.18	TOS	1480.40	1244.22
Status of Local Production Wells					
BIA-9R	10/09/2019			Not Pumping	
BIA-10	10/09/2019			Pumping	
PW2-1	10/09/2019			Not Pumping	
WW-4	10/09/2019			Not Pumping	

Abbreviations:

TOC = top of casing

TOM = top of monument

TOV = top of vault

amsl = above mean sea level

ATTACHMENT 6C

Groundwater Monitoring Summary

TECHNICAL MEMORANDUM

17 January 2020
File No. 133887-002

TO: Florence Copper Inc.
Richard Tremblay
Vice President Operations

FROM: Haley & Aldrich, Inc.
Sarah Cooper, P.E.
Technical Specialist
Mark Nicholls, R.G.
Senior Hydrogeologist

SUBJECT: Florence Copper Project
Quarterly Compliance Monitoring Report
Temporary Aquifer Protection Permit (APP) and Underground Injection Control (UIC)
Permits, Fourth Quarter 2019



Haley & Aldrich, Inc. has prepared this memorandum to present the results of the quarterly compliance groundwater monitoring conducted during the fourth quarter (Q4) 2019 at the Florence Copper Project. The Florence Copper Project is subject to three related permits issued by the Arizona Department of Environmental Quality (ADEQ) and the U.S. Environmental Protection Agency (USEPA).

APP Covering the 1997-98 BHP Pilot Facilities and Future Operations (Sitewide APP):

- ADEQ APP No. P-101704 (LTF 65804) dated 13 October 2017.

Permits Covering the Current Production Test Facility:

- ADEQ Temporary APP No. P-106360 (LTF 78815) dated 26 November 2019 (Temporary APP), and
- USEPA UIC Permit No. R9UIC-AZ3-FY11-1 dated 20 December 2016.

This report presents the results of the Q4 2019 groundwater monitoring activities required by the Temporary APP and UIC permits.

SAMPLING ACTIVITIES

During Q4 2019, monitoring was conducted at 16 point-of-compliance (POC), monitoring, and supplemental wells. Water levels were collected on 9 October 2019 and quarterly groundwater sampling was conducted between 16 October and 17 December 2019. For some wells, multiple samples were collected due to potential or confirmed alert level (AL) exceedances. Additional details are provided below. Groundwater sampling and analysis was conducted in accordance with the requirements of Sections 2.5.3 and 2.5.8 of the Temporary APP and Part II.F of the UIC Permit.

The majority of the monitoring wells are equipped with low-flow bladder pumps. Low-flow sampling was conducted in accordance with Section 2.5.3 of the Temporary APP. Wells M22-O, M57-O, and M59-O¹ were equipped with stainless steel electric pumps and were sampled by purging a minimum of three borehole volumes. No modified sampling procedures were used, and no reduced pumping volumes were observed.

Each sample was labeled, placed in a cooler with ice, maintained at 4 degrees Celsius (°C) ± 2°C, and transported under chain of custody to Turner Laboratories, Inc. (Turner) for analysis. Samples were analyzed for the quarterly (Level 1) monitoring parameters listed in Table 4.1-6 of the Temporary APP and Table 1 of the UIC Permit, as well as the semi-annual (Level 2) monitoring parameters in Table 4.1-7 of the Temporary APP and Table 2 of the UIC Permit. Note that uranium activity and adjusted gross alpha are analyzed and reported only when gross alpha results exceed 12 picocuries per liter (pCi/L), except at M52-UBF, M54-LBF, and M54-O, where those parameters are always analyzed and reported.

Results

The results of the Q4 2019 monitoring event are presented in Tables 1 through 6 as follows:

- Table 1 – Field Parameters²;
- Table 2 – Quarterly (Level 1) analytical parameters;
- Table 3 – Inorganic parameters;
- Table 4 – Radiochemical parameters;
- Table 5 – Organic parameters; and
- Table 6 – Trace Metals.

The Q4 2019 results were compared to the ALs and aquifer quality limits (AQL) listed in the applicable tables in Section 4.0 of the Temporary APP, Appendix K of the UIC Permit, and Table 4B of the document submitted to the USEPA dated 12 December 2018 and entitled “Procedures for Determining Alert Levels and Aquifer Quality Limits for Groundwater Compliance Monitoring.”

¹ Well M59-O was equipped with a low-flow bladder pump during the first sampling event on 21 October 2019, and then an electric pump for the 13 November 2019 sampling event.

² Note that turbidity was monitored as field parameters in addition to field pH, temperature, and specific conductance, but is not required by the Temporary APP or UIC permits and is therefore not reported.

No AQL exceedances occurred during Q4 2019. The following AL exceedances occurred in Q4 2019, and are described in more detail below:

- Temporary APP and UIC AL exceedance for magnesium in well M57-O; and
- Temporary APP gross alpha AL in well M60-O.

CONTINGENCY SAMPLING PLANS

Contingency sampling plan procedures generally consistent with Section 2.6.2.4 of the Temporary APP and Part II.H.2 of the UIC Permit were implemented during Q4 2019 after initial sample results for three wells (M57-O, M59-O, and M60-O) indicated one or more potential AL or AQL exceedances.

Well M57-O

On 30 October 2019, Florence Copper Inc. (Florence Copper) was notified of a potential AL exceedance for magnesium in well M57-O from the sample collected on 10 October 2019. The magnesium concentration was reported at 22 milligrams per liter (mg/L), above the UIC AL of 18 mg/L and the Temporary APP AL of 20 mg/L. All other results were below their applicable ALs and AQLs.

On 30 October 2019, Turner confirmed the accuracy of the magnesium results for the M57-O sample collected on 10 October 2019. Florence Copper notified the ADEQ of the potential exceedance on 1 November 2019. Notification to the USEPA is not required until the results of the verification sampling have been received. A verification sample was collected from well M57-O on 31 October 2019. The magnesium concentration in the 31 October sample was reported at 23 mg/L on 19 November 2019. The results of the verification sampling confirmed the exceedance of both Temporary APP and UIC AL for magnesium at M57-O.

Florence Copper submitted written confirmation of the exceedance to the ADEQ through the MyDEQ portal on 20 November 2019. The results of an investigation into the cause of the exceedance was subsequently submitted to the ADEQ via the MyDEQ portal on 27 November 2019. Per section 2.6.2.4.1 of the Temporary APP, Florence Copper initiated monthly sampling of the quarterly compliance groundwater parameters in November 2019. Monthly samples were collected from M57-O on 25 November 2019 and 9 December 2019 and are reported in the attached tables.

On 20 November 2019, Florence Copper submitted both notification of the confirmed AL exceedance, and a report evaluating the cause, impact, and/or mitigation of the exceedance to the USEPA.

The reports submitted to the ADEQ and USEPA noted that the inward hydraulic gradient has been maintained at all times during the operation of the Production Test Facility (PTF) wellfield, and the AL exceedance was likely due to water outside of the PTF wellfield, which contains elevated levels of magnesium, being drawn into the wellfield. Mitigation measures implemented at the facility consist of increasing the recovery well flow rates on the west side of the PTF wellfield and increased wellfield over-pumping in general. The increase in recovery rates and decrease in injection rates have resulted in higher hydraulic gradients towards the PTF wellfield. Florence Copper is currently awaiting a response

from the USEPA in regards to this AL exceedance and any additional monitoring or actions that may be required by the agency. Under the Temporary APP, monthly sampling of M57-O will continue until three sequential sampling events demonstrate that magnesium concentrations are below the applicable AL.

Well M59-O

On 12 November 2019, Florence Copper was notified of the following potential AL and AQL exceedances for monitoring well M59-O based on the 21 October 2019 sampling event:

- Both the primary and duplicate gross alpha results (15.9 ± 0.8 and 17.8 ± 0.9 pCi/L, respectively) exceeded the Temporary APP AL of 15 pCi/L, and the UIC AL *and* AQL of 15.8 pCi/L.
- The duplicate sample Radium 226 & 228 result of 7.3 ± 0.6 pCi/L exceeded the UIC AL *and* AQL of 6.9 pCi/L.

All other results were below their applicable ALs and AQLs. Florence Copper notified the ADEQ of the potential gross alpha exceedance on 14 November 2019. Notification to the USEPA is not required until the results of the verification sampling have been received. A verification sample was collected from well M59-O on 13 November 2019.

Florence Copper was notified of the results of verification sampling on 11 December 2019, and the gross alpha and Radium 226 & 228 results of 10.6 ± 1.1 pCi/L and 6.2 ± 0.5 pCi/L, respectively, were below all applicable ALs and AQLs. There were no confirmed exceedances at M59-O. Florence Copper notified the ADEQ of the gross alpha verification sampling results on 11 December 2019. Florence Copper notified the USEPA of the gross alpha and radium 226 & 228 verification sampling results on 12 December 2019 and 6 January 2020, respectively. No further action was required.

Well M60-O

On 16 December 2019, Florence Copper was notified of the following potential AL and AQL exceedances for monitoring well M60-O based on the 13 November 2019 sampling event:

- The gross alpha result of 42.8 ± 2.1 pCi/L exceeded the Temporary APP AL of 15 pCi/L; and
- The radon result of $2,999.1 \pm 300.7$ pCi/L exceeded the UIC AL of 2,480 pCi/L.

All other results, including the adjusted gross alpha result, were below their applicable ALs and AQLs.

A request to confirm the radiological sample results for the M60-O sample collected on 13 November 2019 was sent to Radiation Safety Engineers on 16 December 2019. A verification sample was collected from well M60-O on 17 December 2019. Florence Copper was notified of the verification sample results on 2 January 2020, prior to Radiation Safety Engineering confirming the accuracy of the initial sample results. As a result, and due to the similarity in sample results, Florence Copper considered the initial sample results confirmed as of 2 January 2020.

The gross alpha concentration in M60-O in the 17 December 2019 verification sample was reported at 40.5 ± 1.5 pCi/L. Therefore, the verification sample result confirmed the exceedance of the Temporary APP AL for gross alpha at M60-O. The radon concentration in the verification sample was reported at $2,048.4 \pm 205.8$ pCi/L, below the UIC AL, therefore no radon exceedance occurred at M60-O.

Florence Copper notified the ADEQ of the confirmed gross alpha exceedance on 6 January 2020, and an investigation into the cause of the exceedance is currently underway. Per section 2.6.2.4.1 of the Temporary APP, Florence Copper has initiated more frequent, monthly sampling of the required groundwater parameters, with the first monthly sample collected on 9 January 2020.

Florence Copper notified the USEPA of the confirmation sample results on 6 January 2020. Based on the sample results, no exceedances of the UIC ALs or AQLs occurred, and no further action is necessary. It should be noted, however, that the notification letter incorrectly indicates the gross alpha exceedance in M60-O was confirmed. The M60-O gross alpha results were inadvertently compared to the UIC *adjusted* gross alpha AL and AQL. No UIC AL or AQL has been established for gross alpha at M60-O, therefore, no exceedance occurred. Furthermore, comparison of the adjusted gross alpha results to the UIC AL and AQL for that parameter demonstrates that adjusted gross alpha results remained below the applicable AL and AQL as well. Additional correspondence from Florence Copper to the USEPA regarding the false gross alpha exceedance is forthcoming.

Enclosures:

- Table 1 – Q4 2019 Field Parameters
- Table 2 – Q4 2019 Quarterly (Level 1) Analytical Parameters
- Table 3 – Q4 2019 Inorganic Parameters
- Table 4 – Q4 2019 Radiochemical Parameters
- Table 5 – Organic Parameters
- Table 6 – Q4 2019 Trace Metals
- Appendix A – Data Quality Assurance/Quality Control Summary Memorandum

TABLES

TABLE 1
Q4 2019 FIELD PARAMETERS
FLORENCE COPPER INC.
FLORENCE, ARIZONA

Location ID	Sample Date	Temperature, Field	Temperature, Field	pH, Field	pH Low UIC Alert Level	pH High UIC Alert Level	Specific Conductance, Field
		Deg C	Deg F	pH units	pH units	pH units	µmhos/cm
M14-GL	10/16/2019	28.3	82.9	7.34	NE	NE	714
M15-GU	10/16/2019	24.5	76.1	7.17	NE	NE	1,233
M22-O	10/16/2019	28.7	83.7	7.98	NE	NE	703
M23-UBF	10/16/2019	23.4	74.1	6.93	NE	NE	1,738
M52-UBF	10/21/2019	22.6	72.7	7.08	6.9	7.9	1,291
M54-LBF	10/21/2019	25.2	77.4	7.04	6.5	8.2	1,344
M54-O	10/22/2019	25.2	77.4	7.60	6.8	9.4	711
M55-UBF	10/23/2019	23.8	74.8	7.05	6.6	7.8	1,305
M56-LBF	10/21/2019	23.4	74.1	7.03	6.5	8.3	1,363
M57-O	10/10/2019	26.1	79.0	7.51	7.2	8.5	1,185
M57-O	10/31/2019	26.4	79.5	7.61	7.2	8.5	1,113
M57-O	11/25/2019	25.6	78.1	7.31	7.2	8.5	1,210
M57-O	12/09/2019	25.5	77.9	7.26	7.2	8.5	1,157
M58-O	10/22/2019	26.2	79.2	7.32	6.2	9.0	1,227
M59-O	10/21/2019	26.5	79.7	7.59	7.0	8.7	925
M59-O	11/13/2019	25.7	78.3	7.21	7.0	8.7	1,091
M60-O	11/13/2019	24.7	76.5	7.24	6.3	9.0	1,495
M60-O	12/17/2019	20.8	69.4	6.92	6.3	9.0	1,360
M61-LBF	10/23/2019	25.5	77.9	7.78	6.8	9.4	737
MW-01-LBF	10/21/2019	24.7	76.5	6.94	6.2	8.5	1,345
MW-01-O	10/10/2019	25.4	77.7	7.52	5.8	9.4	1,410

Notes:

Deg C = degrees Celsius

Deg F = degrees Fahrenheit

NE = not established

µ mhos/cm = micromhos per centimeter

UIC = Underground Injection Control

TABLE 2

Q4 2019 QUARTERLY (LEVEL 1) ANALYTICAL PARAMETERS

FLORENCE COPPER INC.

FLORENCE, ARIZONA

Location ID	Sample Date	Sample Type	Magnesium, Dissolved			Sulfate			Fluoride					Total Dissolved Solids (TDS)		
			Concentration	TEMP APP Alert Level	UIC Alert Level	Concentration	TEMP APP Alert Level	UIC Alert Level	Concentration	TEMP APP Alert Level	TEMP APP AQL	UIC Alert Level	UIC AQL	Concentration	TEMP APP Alert Level	UIC Alert Level
M14-GL	10/16/2019	Primary	2.1 J	23	23	62	144	144	0.60	3.2	4.0	3.2	4.0	820	874	874
M15-GU	10/16/2019	Primary	25	44	44	86	126	126	0.51	3.2	4.0	3.2	4.0	720	1359	1359
M15-GU	10/16/2019	Primary	--	--	--	--	--	--	--	--	--	--	--	440	1359	1359
M22-O	10/16/2019	Primary	6.8	8.6	8.6	59	86	86	0.65	3.2	4.0	3.2	4.0	430	1094	1094
M23-UBF	10/16/2019	Primary	31	69	69	240	411	411	0.77	3.2	4.0	3.2	4.0	1,100	2392	2392
M52-UBF	10/21/2019	Primary	21	45	41	170	351	316	0.79	3.2	4.0	3.2	4.0	850	1666	1502
M54-LBF	10/21/2019	Primary	22	46	42	170	329	297	0.76	3.2	4.0	3.2	4.0	880	1731	1561
M54-O	10/22/2019	Primary	6.4	11	10	63	200	200	0.48 J	3.2	4.0	3.2	4.0	370	855	771
M55-UBF	10/23/2019	Primary	24	50	45	200	484	425	0.58	3.2	--	3.2	4.0	940	1900	1711
M55-UBF	10/23/2019	Primary	--	--	--	--	--	--	--	--	--	--	--	780	1900	1711
M56-LBF	10/21/2019	Primary	25	46	41	170	312	281	< 0.40	3.2	--	3.2	4.0	880	1646	1485
M57-O	10/10/2019	Primary	22	20	18	150	200	200	< 0.40	3.2	--	3.2	4.0	780	934	842
M57-O	10/10/2019	Duplicate	22	20	18	150	200	200	< 0.40	3.2	--	3.2	4.0	780	934	842
M57-O ⁽²⁾	10/31/2019	Primary	23	20	18	160	200	200	0.43 J	3.2	--	3.2	4.0	780	934	842
M57-O ⁽²⁾	11/25/2019	Primary	20	20	18	130	200	200	< 0.40	3.2	--	3.2	4.0	680	934	842
M57-O ⁽²⁾	12/09/2019	Primary	23	20	18	160	200	200	0.47 J	3.2	--	3.2	4.0	800	934	842
M58-O	10/22/2019	Primary	18	59	51	120	435	385	< 0.40	3.2	--	3.2	4.0	870	1716	1539
M59-O	10/21/2019	Primary	13	27	23	100	234	202	0.65	3.2	--	3.2	4.0	570	947	854
M59-O	10/21/2019	Duplicate	13	27	23	100	234	202	0.64	3.2	--	3.2	4.0	580	947	854
M59-O ⁽³⁾	11/13/2019	Primary	14	27	23	120	234	202	0.54	3.2	--	3.2	4.0	640	947	854
M60-O	11/13/2019	Primary	25	54	45	180	313	271	< 0.40	3.2	--	3.2	4.0	870	1492	1314
M60-O ⁽⁴⁾	12/17/2019	Primary	25	54	45	170	313	271	< 0.40	3.2	--	3.2	4.0	890	1492	1314
M61-LBF	10/23/2019	Primary	7.9	13	12	61	200	200	0.51	3.2	--	3.2	4.0	430	852	769
MW-01-LBF	10/21/2019	Primary	25	47	43	190	340	307	< 0.40	3.2	--	3.2	4.0	890	1711	1543
MW-01-O	10/10/2019	Primary	26	48	42	180	254	229	< 0.40	3.2	--	3.2	4.0	940	1563	1409
Arizona Aquifer Water Quality Standard ⁽¹⁾			--	--	--	--	--	--	4.0	--	--	--	--	--	--	--

Notes:

All results in milligrams per liter (mg/L)

Detects are **bolded**.

Non-detects are reported to the laboratory method detection limit (< MDL).

AQL = Aquifer Quality Limit

Temp APP = Temporary Aquifer Protection Permit No. 106360

UIC = Underground Injection Control Permit No. R9UIC-AZ3-FY11-1

(1) Arizona Aquifer Water Quality Standard (AWQS), Drinking Water Standard, December 31, 2016.

(2) Verification sampling conducted on 10/31/2019, followed by increased frequency monitoring on 11/25/2019 and 12/09/2019.

(3) Verification sampling conducted on 11/13/2019.

(4) Verification sampling conducted on 12/17/2019.

Alert Level Exceedance

TABLE 3

Q4 2019 INORGANIC PARAMETERS

FLORENCE COPPER INC.

FLORENCE, ARIZONA

Location ID	Sample Date	Sample Type	Alkalinity, Bicarbonate Concentration (mg/L)	Alkalinity, Carbonate Concentration (mg/L)	Dissolved Calcium Concentration (mg/L)	Chloride Concentration (mg/L)	Nitrate (as N)			Nitrite (as N)			Dissolved Potassium Concentration (mg/L)	Dissolved Sodium Concentration (mg/L)	pH (Lab) Concentration (pH units)	Conductivity (Lab) Concentration (umhos/cm)	Cation/Anion Balance Concentration (meq/L)
							Concentration (mg/L)	UIC AL	UIC AQL	Concentration (mg/L)	UIC AL	UIC AQL					
M14-GL	10/16/2019	Primary	62	< 2.0	17	150	0.91	--	--	< 0.018	--	--	3.0 J	140	8.0	760	0.110
M15-GU	10/16/2019	Primary	190	< 2.0	94	260	5.1	--	--	< 0.018	--	--	5.7	130	7.4	1,200	5.65
M22-O	10/16/2019	Primary	94	< 2.0	34	130	0.48 J	--	--	0.074 J	--	--	4.1 J	110	8.0	730	2.71
M23-UBF	10/16/2019	Primary	190	< 2.0	150	300	9.8	--	--	< 0.018	--	--	5.8	200	7.3	1,900	0.0200
M52-UBF	10/21/2019	Primary	200	< 2.0	99	200	9.3	18.3	18.3	< 0.018	0.8	1.0	4.5 J	130	7.4	1,400	8.69
M54-LBF	10/21/2019	Primary	200	< 2.0	110	220	8.6	18.4	18.4	< 0.018	0.8	1.0	5.1	150	7.3	1,500	4.49
M54-O	10/22/2019	Primary	66	< 2.0	30	160	1.4	8.0	10	< 0.018	0.8	1.0	5.7	100	7.8	800	7.90
M55-UBF	10/23/2019	Primary	200	< 2.0	110	220	8.0	17	17	< 0.018	0.8	1.0	5.0	150	7.4	1,500	5.83
M56-LBF	10/21/2019	Primary	180	< 2.0	110	230	9.6	15.5	15.5	< 0.018	0.8	1.0	5.8	150	7.3	1,600	2.92
M57-O	10/10/2019	Primary	120	< 2.0	91	210	5.8	8.0	10	< 0.018	0.8	1.0	5.4	110	7.5	1,300	5.43
M57-O	10/10/2019	Duplicate	120	< 2.0	89	210	5.7	8.0	10	< 0.018	0.8	1.0	5.4	110	7.5	1,300	5.74
M58-O	10/22/2019	Primary	94	< 2.0	92	260	6.8	17.4	17.4	< 0.018	0.8	1.0	5.7	140	7.5	1,400	2.28
M59-O	10/21/2019	Primary	100	< 2.0	64	180	2.8	8.0	10	< 0.018	0.8	1.0	4.8 J	100	7.6	1,000	7.76
M59-O	10/21/2019	Duplicate	100	< 2.0	65	180	2.3	8.0	10	< 0.018	0.8	1.0	4.9 J	100	7.8	1,000	7.29
M59-O ⁽²⁾	11/13/2019	Primary	--	--	--	--	--	--	--	--	--	--	--	--	7.7	1,100	--
M60-O	11/13/2019	Primary	200	< 2.0	120	210	8.7	16.3	16.3	< 0.018	0.8	1.0	5.6	140	7.4	1,500	3.16
M60-O	11/13/2019	Primary	--	--	--	--	--	--	--	< 0.018	0.8	1.0	--	--	--	--	--
M60-O ⁽³⁾	12/17/2019	Primary	--	--	--	--	--	--	--	--	--	--	--	--	7.7	1,600	--
M61-LBF	10/23/2019	Primary	98	< 2.0	39	130	0.34 J	8.0	10	< 0.018	0.8	1.0	5.0 J	100	7.9	730	3.78
MW-01-LBF	10/21/2019	Primary	220	< 2.0	110	200	8.0	16.1	16.1	< 0.018	0.8	1.0	6.1	140	7.3	1,600	5.45
MW-01-O	10/10/2019	Primary	130	< 2.0	120	270	8.5	13.5	13.5	< 0.018	0.8	1.0	5.0	130	7.5	1,600	4.69
Arizona Aquifer Water Quality Standard ⁽¹⁾			--	--	--	--	10			1.0			--	--	--	--	

Notes:

Detects are **bolded**.

Non-detects are reported to the laboratory method detection limit (< MDL).

AL = Alert Level

AQL = Aquifer Quality Limit

meq/L = milliequivalents per liter

UIC = Underground Injection Control Permit No. R9UIC-AZ3-FY11-1

(1) Arizona Aquifer Water Quality Standard (AWQS), Drinking Water Standard, December 31, 2016.

(2) Verification sampling conducted on 11/13/2019.

(3) Verification sampling conducted on 12/17/2019.

TABLE 4

Q4 2019 RADIOCHEMICAL PARAMETERS

FLORENCE COPPER INC.

FLORENCE, ARIZONA

Location ID	Sample Date	Sample Type	Gross Alpha Activity			Total Uranium Isotopes ⁽¹⁾	Adjusted Gross Alpha Activity ⁽¹⁾					Gross Beta Activity			Radium 226+228					Radon-222	
			Concentration (pCi/L)	TEMP APP AL	UIC AL		Concentration (pCi/L)	TEMP APP AL	TEMP APP AQL	UIC AL	UIC AQL	Concentration (pCi/L)	UIC AL	UIC AQL	Concentration (pCi/L)	TEMP APP AL	TEMP APP AQL	UIC AL	UIC AQL	Concentration (pCi/L)	UIC AL
M14-GL	10/16/2019	Primary	1.5 ± 0.5	--	15	--	--	12	15	12	15	< 2.121	--	--	0.5 ± 0.9	4.0	5.0	4.0	5.0	1122.0 ± 113.1	--
M15-GU	10/16/2019	Primary	3.1 ± 0.7	--	15	--	--	12	15	12	15	6.4 ± 1.4	--	--	< 0.67	4.0	5.0	4.0	5.0	670.5 ± 68	--
M22-O	10/16/2019	Primary	2.5 ± 0.6	--	15	--	--	12	15	12	15	3.7 ± 1.3	--	--	< 0.67	4.0	5.0	4.0	5.0	1529.4 ± 153.9	--
M23-UBF	10/16/2019	Primary	4.6 ± 0.8	--	15	--	--	12	15	12	15	6.2 ± 1.6	--	--	< 0.67	4.0	5.0	4.0	5.0	209.5 ± 22.4	--
M52-UBF	10/21/2019	Primary	5.1 ± 0.5	--	--	5.7 ± 0.8	< 1.0	--	26.5	12	15	6.1 ± 1.5	18	18	< 0.78	--	17.2	4.0	5.0	139.7 ± 15.8	265
M54-LBF	10/21/2019	Primary	5.2 ± 0.5	--	--	5.9 ± 0.8	< 1.0	--	26.5	12.9	15	5.6 ± 1.5	26	26	< 0.78	--	17.2	4.0	5.0	488.8 ± 50	1242
M54-O	10/22/2019	Primary	3.0 ± 0.6	--	--	3.5 ± 0.6	< 1.0	--	26.5	12.6	15	7.0 ± 1.3	28	28	< 0.70	--	17.2	4.0	4.0	1216.6 ± 122.6	8453
M55-UBF	10/23/2019	Primary	3.0 ± 0.4	15	--	--	--	26.5	--	12	15	6.6 ± 1.4	17	17	< 0.80	17.2	--	4.0	5.0	137.6 ± 16.2	394
M56-LBF	10/21/2019	Primary	6.9 ± 0.5	15	--	--	--	26.5	--	13.6	15	8.5 ± 1.5	22	22	< 0.78	17.2	--	4.0	5.0	533.0 ± 54.4	1152
M57-O	10/10/2019	Primary	10.4 ± 0.7	15	--	--	--	26.5	--	12	15	9.5 ± 1.4	16	16	1.4 ± 0.3	17.2	--	4.0	5.0	6950.6 ± 695.9	11180
M57-O	10/10/2019	Duplicate	11.2 ± 0.7	15	--	--	--	26.5	--	12	15	11.3 ± 1.4	16	16	2.3 ± 0.5	17.2	--	4.0	5.0	7198.2 ± 720.7	11180
M58-O	10/22/2019	Primary	10.3 ± 1.0	15	--	--	--	26.5	--	15	15	14.1 ± 1.7	47	47	6.0 ± 0.5	17.2	--	13.1	13.1	11528.5 ± 1153.7	13070
M59-O	10/21/2019	Primary	15.9 ± 0.8	15	--	3.6 ± 1.4	12.3 ± 1.6	26.5	--	15.8	15.8	10.9 ± 1.5	16	16	5.0 ± 0.5	17.2	--	6.9	6.9	10277.7 ± 1028.6	20462
M59-O	10/21/2019	Duplicate	17.8 ± 0.9	15	--	3.3 ± 0.6	14.5 ± 1.1	26.5	--	15.8	15.8	10.3 ± 1.4	16	16	7.3 ± 0.6	17.2	--	6.9	6.9	10581.2 ± 1059	20462
M59-O ⁽³⁾	11/13/2019	Primary	10.6 ± 1.1	15	--	--	--	26.5	--	15.8	15.8	--	16	16	6.2 ± 0.5	17.2	--	6.9	6.9	--	20462
M60-O	11/13/2019	Primary	42.8 ± 2.1	15	--	35.4 ± 2.1	7.4 ± 3	26.5	--	17.4	17.4	17.5 ± 1.7	33	33	8.5 ± 0.7	17.2	--	13.9	13.9	2999.1 ± 300.7	2480
M60-O ⁽⁴⁾	12/17/2019	Primary	40.5 ± 1.5	15	--	37.4 ± 4.1	3.1 ± 4.4	26.5	--	17.4	17.4	--	33	33	--	--	--	13.9	13.9	2048.4 ± 205.8	2480
M61-LBF	10/23/2019	Primary	2.3 ± 0.3	15	--	--	--	26.5	--	12	15	7.6 ± 1.3	16	16	< 0.80	17.2	--	4.0	5.0	384.3 ± 40	2869
MW-01-LBF	10/21/2019	Primary	8.5 ± 0.6	15	--	--	--	26.5	--	21.1	21.1	8.4 ± 1.5	21	21	< 0.78	17.2	--	4.0	5.0	580.0 ± 59.1	2094
MW-01-O	10/10/2019	Primary	12.6 ± 0.7	15	--	9.6 ± 1.1	3.0 ± 1.3	26.5	--	21.9	21.9	13.2 ± 1.5	34	34	7.2 ± 0.6	17.2	--	14.4	14.4	4970.6 ± 497.9	15707
Arizona Aquifer Water Quality Standard ⁽²⁾			-- ⁽⁵⁾			-- ⁽⁵⁾	15					4 mrem/yr ⁽⁶⁾			5					--	

Notes:

Detects are **bolded**.

Non-detects are reported to the laboratory detection limit (< DL).

AL = Alert Level

AQL = Aquifer Quality Limit

pCi/L = picocuries per liter

Temp APP = Temporary Aquifer Protection Permit No. 106360

UIC = Underground Injection Control Permit No. R9UIC-AZ3-FY11-1

(1) Total uranium isotopes are analyzed and adjusted gross alpha calculated when gross alpha concentration exceeds 12 pCi/L, and always at M52-UBF, M54-LBF, and M54-O.

(2) Arizona Aquifer Water Quality Standard (AWQS), Drinking Water Standard, December 31, 2016.

(3) Verification sampling conducted on 11/13/2019.

(4) Verification sampling conducted on 12/17/2019.

(5) The AWQS applies to Adjusted Gross Alpha, which equals Gross Alpha minus Uranium Isotopes.

(6) Beta speciations are performed above 50 pCi/L. All ambient results were below the speciation level.

Alert Level Exceedance

TABLE 5

Q4 2019 ORGANIC PARAMETERS

FLORENCE COPPER INC.

FLORENCE, ARIZONA

Location ID	Sample Date	Sample Type	Benzene					Ethylbenzene					Toluene					Total Xylene					Naphthalene			Octane			Total Petroleum Hydrocarbons - Diesel	
			Concentration ($\mu\text{g/L}$)	TEMP APP AL	TEMP APP AQL	UIC AL	UIC AQL	Concentration ($\mu\text{g/L}$)	TEMP APP AL	TEMP APP AQL	UIC AL	UIC AQL	Concentration ($\mu\text{g/L}$)	TEMP APP AL	TEMP APP AQL	UIC AL	UIC AQL	Concentration ($\mu\text{g/L}$)	TEMP APP AL	TEMP APP AQL	UIC AL	UIC AQL	Concentration ($\mu\text{g/L}$)	UIC AL	UIC AQL	Concentration ($\mu\text{g/L}$)	UIC AL	UIC AQL	Concentration (mg/L)	UIC AL
M14-GL	10/16/2019	Primary	< 0.063	4.0	5.0	4.0	5.0	< 0.054	560	700	560	700	< 0.057	80	1000	800	1000	< 0.13	8000	10000	8000	10000	< 0.073	--	--	< 0.50	--	--	< 0.096	--
M15-GU	10/16/2019	Primary	< 0.063	4.0	5.0	4.0	5.0	< 0.054	560	700	560	700	< 0.057	80	1000	800	1000	< 0.13	8000	10000	8000	10000	< 0.073	--	--	< 0.50	--	--	< 0.096	--
M22-O	10/16/2019	Primary	< 0.063	4.0	5.0	4.0	5.0	< 0.054	560	700	560	700	< 0.057	80	1000	800	1000	< 0.13	8000	10000	8000	10000	< 0.073	--	--	< 0.50	--	--	< 0.096	--
M23-UBF	10/16/2019	Primary	< 0.063	4.0	5.0	4.0	5.0	< 0.054	560	700	560	700	< 0.057	80	1000	800	1000	< 0.13	8000	10000	8000	10000	< 0.073	--	--	< 0.50	--	--	< 0.096	--
M52-UBF	10/21/2019	Primary	< 0.063	4.0	5.0	4.0	5.0	< 0.054	560	700	560	700	< 0.057	80	1000	800	1000	< 0.13	8000	10000	8000	10000	< 0.073	3.5	3.5	< 0.50	0.9	0.9	< 0.096	0.28
M54-LBF	10/21/2019	Primary	< 0.063	4.0	5.0	4.0	5.0	< 0.054	560	700	560	700	< 0.057	80	1000	800	1000	< 0.13	8000	10000	8000	10000	< 0.073	3.5	3.5	< 0.50	0.9	0.9	< 0.096	0.28
M54-O	10/22/2019	Primary	< 0.063	4.0	5.0	4.0	5.0	< 0.054	560	700	560	700	0.11 J	80	1000	800	1000	< 0.13	8000	10000	8000	10000	< 0.073	3.5	3.5	< 0.50	0.9	0.9	< 0.096	0.28
M55-UBF	10/23/2019	Primary	< 0.063	4.0	--	4.0	5.0	< 0.054	560	--	560	700	< 0.057	800	--	800	1000	< 0.13	8000	--	8000	10000	< 0.073	3.5	3.5	< 0.50	0.9	0.9	< 0.096	0.28
M56-LBF	10/21/2019	Primary	< 0.063	4.0	--	4.0	5.0	< 0.054	560	--	560	700	< 0.057	800	--	800	1000	< 0.13	8000	--	8000	10000	< 0.073	3.5	3.5	< 0.50	0.9	0.9	< 0.096	0.28
M57-O	10/10/2019	Primary	< 0.063	4.0	--	4.0	5.0	< 0.054	560	--	560	700	0.96	800	--	800	1000	< 0.13	8000	--	8000	10000	< 0.073	3.5	3.5	< 0.50	0.9	0.9	< 0.096	0.28
M57-O	10/10/2019	Duplicate	< 0.063	4.0	--	4.0	5.0	< 0.054	560	--	560	700	0.89	800	--	800	1000	< 0.13	8000	--	8000	10000	< 0.073	3.5	3.5	< 0.50	0.9	0.9	< 0.096	0.28
M58-O	10/22/2019	Primary	< 0.063	4.0	--	4.0	5.0	< 0.054	560	--	560	700	1.3	800	--	800	1000	< 0.13	8000	--	8000	10000	< 0.073	3.5	3.5	< 0.50	0.9	0.9	< 0.096	0.28
M59-O	10/21/2019	Primary	< 0.063	4.0	--	4.0	5.0	< 0.054	560	--	560	700	0.81	800	--	800	1000	< 0.13	8000	--	8000	10000	< 0.073	3.5	3.5	< 0.50	0.9	0.9	< 0.096	0.28
M59-O	10/21/2019	Duplicate	< 0.063	4.0	--	4.0	5.0	< 0.054	560	--	560	700	0.77	800	--	800	1000	< 0.13	8000	--	8000	10000	< 0.073	3.5	3.5	< 0.50	0.9	0.9	< 0.096	0.28
M60-O	11/13/2019	Primary	< 0.063	4.0	--	4.0	5.0	< 0.054	560	--	560	700	< 0.057	800	--	800	1000	< 0.13	8000	--	8000	10000	< 0.073	3.5	3.5	< 0.50	0.9	0.9	0.18	0.28
M61-LBF	10/23/2019	Primary	< 0.063	4.0	--	4.0	5.0	< 0.054	560	--	560	700	< 0.057	800	--	800	1000	< 0.13	8000	--	8000	10000	< 0.073	3.5	3.5	< 0.50	0.9	0.9	< 0.096	0.28
MW-01-LBF	10/21/2019	Primary	< 0.063	4.0	--	4.0	5.0	< 0.054	560	--	560	700	< 0.057	800	--	800	1000	< 0.13	8000	--	8000	10000	< 0.073	3.5	3.5	< 0.50	0.9	0.9	< 0.096	0.28
MW-01-O	10/10/2019	Primary	< 0.063	4.0	--	4.0	5.0	< 0.054	560	--	560	700	< 0.057	800	--	800	1000	< 0.13	8000	--	8000	10000	< 0.073	3.5	3.5	< 0.50	0.9	0.9	< 0.096	0.28

Arizona Aquifer Water Quality Standard⁽¹⁾

5

700

1000

10000

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TABLE 6

Q4 2019 TRACE METALS

FLORENCE COPPER INC.

FLORENCE, ARIZONA

Location ID	Sample Date	Sample Type	Dissolved Aluminum			Dissolved Antimony				Dissolved Arsenic				Dissolved Barium				Dissolved Beryllium				Dissolved Cadmium								
			Concentration (mg/L)	TEMP APP AL	UIC AL	Concentration (mg/L)	TEMP APP AL	TEMP APP AQL	UIC AL	UIC AQL	Concentration (mg/L)	TEMP APP AL	TEMP APP AQL	UIC AL	UIC AQL	Concentration (mg/L)	TEMP APP AL	TEMP APP AQL	UIC AL	UIC AQL	Concentration (mg/L)	TEMP APP AL	TEMP APP AQL	UIC AL	UIC AQL					
M14-GL	10/16/2019	Primary	0.0181 J	0.71	0.71	< 0.000039	0.0048	0.006	0.0048	0.006	0.00062	0.026	0.050	0.026	0.050	0.017	1.6	2.0	1.6	2.0	< 0.000013	0.0032	0.004	0.0032	0.004	< 0.000050	0.004	0.005	0.004	0.005
M15-GU	10/16/2019	Primary	< 0.0655	0.71	0.71	0.000074 J	0.0048	0.006	0.0048	0.006	0.0015	0.026	0.050	0.026	0.050	0.0040	1.6	2.0	1.6	2.0	< 0.000066	0.0032	0.0043	0.0032	0.004	< 0.000050	--	0.02	--	0.02
M22-O	10/16/2019	Primary	0.0185 J	0.71	0.71	0.000070 J	--	0.0076	0.0048	0.006	0.00039 J	0.026	0.050	0.026	0.050	0.0030	1.6	2.0	1.6	2.0	0.000043 J	0.032	0.004	0.0032	0.004	0.000078 J	--	0.02	--	0.02
M23-UBF	10/16/2019	Primary	< 0.0655	0.71	0.71	0.000071 J	0.0048	0.006	0.0048	0.006	0.0023	0.026	0.050	0.026	0.050	0.069	1.6	2.0	1.6	2.0	< 0.000066	0.0032	0.004	0.0032	0.004	< 0.000050	0.004	0.005	0.004	0.005
M52-UBF	10/21/2019	Primary	< 0.0131	0.16	0.16	0.000054 J	0.0048	0.006	0.0048	0.006	0.0025	0.26	0.050	0.026	0.050	0.048	1.6	2.0	1.6	2.0	< 0.000013	0.0032	0.004	0.0032	0.004	< 0.000050	0.004	0.005	0.004	0.005
M54-LBF	10/21/2019	Primary	0.0139 J	0.16	0.16	0.000054 J	0.0048	0.006	0.0048	0.006	0.0017	0.026	0.050	0.026	0.050	0.054	1.6	2.0	1.6	2.0	0.000015 J	0.0032	0.004	0.0032	0.004	< 0.000050	0.004	0.005	0.004	0.005
M54-O	10/22/2019	Primary	0.0157 J	0.16	0.16	0.000047 J	0.0048	0.006	0.0048	0.006	0.00069	0.026	0.050	0.026	0.050	0.0061	1.6	2.0	1.6	2.0	0.000026 J	0.0032	0.004	0.0032	0.004	< 0.000050	0.004	0.005	0.004	0.005
M55-UBF	10/23/2019	Primary	< 0.0131	0.16	0.16	0.000092 J	0.0048	--	0.0048	0.006	0.0024	0.026	--	0.026	0.050	0.060	1.6	--	1.6	2.0	0.000017 J	0.0032	--	0.0032	0.004	< 0.000050	0.004	--	0.004	0.005
M56-LBF	10/21/2019	Primary	< 0.0131	0.16	0.16	0.000049 J	0.0048	--	0.0048	0.006	0.0013	0.026	--	0.026	0.050	0.079	1.6	--	1.6	2.0	< 0.000013	0.0032	--	0.0032	0.004	< 0.000050	0.004	--	0.004	0.005
M57-O	10/10/2019	Primary	0.0194 J	0.16	0.16	< 0.000039	0.0048	--	0.0048	0.006	0.0011	0.026	--	0.026	0.050	0.017	1.6	--	1.6	2.0	0.000020 J	0.0032	--	0.0032	0.004	0.00011 J	0.004	--	0.004	0.005
M57-O	10/10/2019	Duplicate	0.0192 J	0.16	0.16	< 0.000039	0.0048	--	0.0048	0.006	0.00094	0.026	--	0.026	0.050	0.017	1.6	--	1.6	2.0	< 0.000013	0.0032	--	0.0032	0.004	< 0.000050	0.004	--	0.004	0.005
M58-O	10/22/2019	Primary	< 0.0131	0.16	0.16	< 0.000039	0.0048	--	0.0048	0.006	0.0030	0.026	--	0.026	0.050	0.11	1.6	--	1.6	2.0	< 0.000013	0.0032	--	0.0032	0.004	< 0.000050	0.004	--	0.004	0.005
M59-O	10/21/2019	Primary	0.0206 J	0.16	0.16	< 0.000039	0.0048	--	0.0048	0.006	0.0020	0.026	--	0.026	0.050	0.083	1.6	--	1.6	2.0	< 0.000013	0.0032	--	0.0032	0.004	< 0.000050	0.004	--	0.004	0.005
M59-O	10/21/2019	Duplicate	0.0152 J	0.16	0.16	0.000040 J	0.0048	--	0.0048	0.006	0.0017	0.026	--	0.026	0.050	0.084	1.6	--	1.6	2.0	< 0.000013	0.0032	--	0.0032	0.004	< 0.000050	0.004	--	0.004	0.005
M60-O	11/13/2019	Primary	< 0.0131	0.16	0.16	0.000069 J	0.0048	--	0.0048	0.006	0.0013	0.026	--	0.026	0.050	0.049	1.6	--	1.6	2.0	0.000018 J	0.0032	--	0.0032	0.004	0.000087 J	0.004	--	0.004	0.005
M61-LBF	10/23/2019	Primary	0.0194 J	0.16	0.16	0.000098 J	0.0048	--	0.0048	0.006	0.0021	0.026	--	0.026	0.050	0.081	1.6	--	1.6	2.0	0.000036 J	0.0032	--	0.0032	0.004	< 0.000050	0.004	--	0.004	0.005
MW-01-LBF	10/21/2019	Primary	< 0.0131	0.16	0.16	0.00011 J	0.0048	--	0.0048	0.006	0.0017	0.026	--	0.026	0.050	0.047	1.6	--	1.6	2.0	0.000015 J	0.0032	--	0.0032	0.004	< 0.000050	0.004	--	0.004	0.005
MW-01-O	10/10/2019	Primary	0.0197 J	0.16	0.16	0.000048 J	0.0048	--	0.0048	0.006	0.0016	0.026	--	0.026	0.050	0.028	1.6	--	1.6	2.0	0.000020 J	0.0032	--	0.0032	0.004	< 0.000050	0.004	--	0.004	0.005
Arizona Aquifer Water Quality Standard ⁽¹⁾			--			0.006						0.05					2.0					0.004					0.005			

Notes:

Detects are **bolded**.

Non-detects are reported to the laboratory method detection limit (< MDL).

AL = Alert level

mg/L = milligrams per liter

AQL = Aquifer Quality Limit

Temp APP = Temporary Aquifer Protection

Permit No. 106360

UIC = Underground Injection Control Permit

TABLE 6

Q4 2019 TRACE METALS

FLORENCE COPPER INC.

FLORENCE, ARIZONA

Location ID	Sample Date	Sample Type	Dissolved Chromium					Dissolved Cobalt			Dissolved Copper				Dissolved Iron			Dissolved Lead				Dissolved Manganese			
			Concentration (mg/L)	TEMP APP AL	AQL	UIC AL	UIC AQL	Concentration (mg/L)	TEMP APP AL	UIC AL	Concentration (mg/L)	TEMP APP AL	UIC AL	UIC AQL	Concentration (mg/L)	TEMP APP AL	UIC AL	Concentration (mg/L)	TEMP APP AL	UIC AL	UIC AQL	Concentration (mg/L)	TEMP APP AL	UIC AL	
M14-GL	10/16/2019	Primary	0.0030	0.08	0.10	0.08	0.1	0.00015 J	0.005	0.005	0.00064	0.51	0.51	--	0.011 J	2.2	2.2	0.000096 J	0.04	0.05	0.04	0.05	0.0010	0.22	0.22
M15-GU	10/16/2019	Primary	0.0016	0.08	0.10	0.08	0.1	0.00028	0.005	0.005	0.00097	0.51	0.51	--	0.020 J	2.2	2.2	0.00013 J	0.04	0.05	0.04	0.05	0.00019 J	0.22	0.22
M22-O	10/16/2019	Primary	0.0011	0.08	0.10	0.08	0.1	0.00014 J	0.005	0.005	0.00054	0.51	0.51	--	0.16 J	2.2	2.2	0.00011 J	0.04	0.05	0.04	0.05	0.014	0.22	0.22
M23-UBF	10/16/2019	Primary	0.0013	0.08	0.10	0.08	0.1	0.00037	0.005	0.005	0.0019	0.51	0.51	--	0.041 J	2.2	2.2	0.000083 J	0.04	0.05	0.04	0.05	0.00040	0.22	0.22
M52-UBF	10/21/2019	Primary	0.0011	0.08	0.10	0.08	0.1	0.00038	0.002	0.002	0.0012	0.8	0.8	1.0	0.0043 J	1.4	0.24	0.00021 J	0.04	0.05	0.04	0.05	0.00015 J	0.52	0.04
M54-LBF	10/21/2019	Primary	0.0014	0.08	0.10	0.08	0.1	0.00036	0.002	0.002	0.0013	0.8	0.8	1.0	< 0.0031	1.4	0.24	< 0.00029	0.04	0.05	0.04	0.05	0.00026	0.52	0.04
M54-O	10/22/2019	Primary	0.0037	0.08	0.10	0.08	0.1	0.00024 J	0.002	0.002	0.0011	0.8	0.8	1.0	< 0.0031	1.4	0.89	0.00011 J	0.04	0.05	0.04	0.05	0.00057	0.52	0.30
M55-UBF	10/23/2019	Primary	0.0022	0.08	--	0.08	0.1	0.00035 J	0.002	0.002	0.0019	0.8	0.8	1.0	< 0.0031	1.4	0.24	< 0.000057	0.04	--	0.04	0.05	0.0015	0.52	0.29
M56-LBF	10/21/2019	Primary	0.0011	0.08	--	0.08	0.1	0.00035	0.002	0.002	0.0012	0.8	0.8	1.0	0.010 J	1.4	0.24	0.00011 J	0.04	--	0.04	0.05	0.0019	0.52	0.42
M57-O	10/10/2019	Primary	0.0022	0.08	--	0.08	0.1	0.00018 J	0.002	0.002	0.0060	0.8	0.8	1.0	0.011 J	1.4	0.24	0.00012 J	0.04	--	0.04	0.05	0.0026	0.52	0.04
M57-O	10/10/2019	Duplicate	0.0016	0.08	--	0.08	0.1	0.00019 J	0.002	0.002	0.0061	0.8	0.8	1.0	0.0076 J	1.4	0.24	0.000076 J	0.04	--	0.04	0.05	0.0024	0.52	0.04
M58-O	10/22/2019	Primary	0.0023	0.08	--	0.08	0.1	0.00034	0.002	0.002	0.0013	0.8	0.8	1.0	< 0.0031	1.4	0.24	< 0.000057	0.04	--	0.04	0.05	0.00065	0.52	0.04
M59-O	10/21/2019	Primary	0.0018	0.08	--	0.08	0.1	0.00020 J	0.002	0.002	0.0011	0.8	0.8	1.0	< 0.0031	1.4	0.24	< 0.000057	0.04	--	0.04	0.05	0.0027	0.52	0.05
M59-O	10/21/2019	Duplicate	0.0017	0.08	--	0.08	0.1	0.00018 J	0.002	0.002	0.0010	0.8	0.8	1.0	0.0032 J	1.4	0.24	< 0.000057	0.04	--	0.04	0.05	0.0025	0.52	0.05
M60-O	11/13/2019	Primary	0.0020	0.08	--	0.08	0.1	0.00039	0.002	0.002	0.0077	0.8	0.8	1.0	< 0.0031	1.4	0.24	0.00017 J	0.04	--	0.04	0.05	0.00063	0.52	0.07
M61-LBF	10/23/2019	Primary	0.0019	0.08	--	0.08	0.1	0.00024 J	0.002	0.002	0.00079	0.8	0.8	1.0	< 0.0031	1.4	1.13	0.00012 J	0.04	--	0.04	0.05	0.0014	0.52	0.18
MW-01-LBF	10/21/2019	Primary	0.0019	0.08	--	0.08	0.1	0.00049	0.002	0.002	0.0013	0.8	0.8	1.0	< 0.0031	1.4	0.24	0.000074 J	0.04	--	0.04	0.05	0.00082	0.52	0.23
MW-01-O	10/10/2019	Primary	0.0027	0.08	--	0.08	0.1	0.00028	0.002	0.002	0.0027	0.8	0.8	1.0	0.0035 J	1.4	0.24	0.000073 J	0.04	--	0.04	0.05	0.00046	0.52	0.06
Arizona Aquifer Water Quality Standard ⁽¹⁾			0.1					--			--				--			0.05				--			

Notes:

Detects are **bolded**.

Non-detects are reported to the laboratory method detection limit (< MDL).

AL = Alert level

mg/L = milligrams per liter

AQL = Aquifer Quality Limit

Temp APP = Temporary Aquifer Protection

Permit No. 106360

UIC = Underground Injection Control Permit
No. R9UIC-AZ3-FY11-1(1) Arizona Aquifer Water Quality Standard
(AWQS), Drinking Water Standard, Dec 31, 2016.

TABLE 6

Q4 2019 TRACE METALS

FLORENCE COPPER INC.

FLORENCE, ARIZONA

Location ID	Sample Date	Sample Type	Dissolved Mercury					Dissolved Nickel					Dissolved Selenium					Dissolved Thallium					Total Uranium			Dissolved Zinc		
			Concentration (mg/L)	TEMP APP AL	TEMP APP AQL	UIC AL	UIC AQL	Concentration (mg/L)	TEMP APP AL	TEMP APP AQL	UIC AL	UIC AQL	Concentration (mg/L)	TEMP APP AL	TEMP APP AQL	UIC AL	UIC AQL	Concentration (mg/L)	TEMP APP AL	TEMP APP AQL	UIC AL	UIC AQL	Concentration (mg/L)	TEMP APP AL	UIC AL	Concentration (mg/L)	TEMP APP AL	UIC AL
M14-GL	10/16/2019	Primary	0.00012 J	0.0016	0.002	0.0011	0.002	0.0066	0.08	0.1	0.08	0.1	0.0012 J	0.04	0.05	0.027	0.05	0.000057 J	0.0016	0.002	0.0016	0.002	0.00055	--	--	< 0.0023	2.5	2.5
M15-GU	10/16/2019	Primary	0.00011 J	0.0016	0.002	0.0011	0.002	0.0056	0.08	0.1	0.08	0.13	0.0016 J	0.04	0.05	0.027	0.05	0.00010 J	0.0016	0.002	0.0016	0.002	0.0035	--	--	< 0.0023	2.5	2.5
M22-O	10/16/2019	Primary	0.00011 J	0.0016	0.002	0.0011	0.002	0.00086	0.08	0.1	0.08	0.1	0.0020 J	0.04	0.05	0.027	0.05	0.000083 J	--	0.01	--	0.01	0.0032	--	--	0.012 J	2.5	2.5
M23-UBF	10/16/2019	Primary	0.00012 J	0.0016	0.002	0.0011	0.002	0.0045	0.08	0.10	0.08	0.1	0.0023 J	0.04	0.05	0.027	0.05	0.000074 J	--	0.012	--	0.012	0.0063	--	--	< 0.0023	2.5	2.5
M52-UBF	10/21/2019	Primary	0.000099 J	0.0016	0.002	0.0016	0.002	0.0091	0.08	0.1	0.08	0.1	0.0019 J	0.04	0.05	0.04	0.05	0.000036 J	0.0016	0.002	0.0016	0.002	0.0055	--	0.0081	0.0025 J	4.0	4.0
M54-LBF	10/21/2019	Primary	0.000097 J	0.0016	0.002	0.0016	0.002	0.0040	0.08	0.1	0.08	0.1	0.0017 J	0.04	0.05	0.04	0.05	< 0.00012	0.0016	0.002	0.0016	0.002	0.0059	--	0.0118	0.0030 J	4.0	4.0
M54-O	10/22/2019	Primary	0.0000071 J	0.0016	0.002	0.0016	0.002	0.0045	0.08	0.1	0.08	0.1	0.00096 J	0.04	0.05	0.04	0.05	0.000087 J	0.0016	0.002	0.0016	0.002	0.0060	--	0.0193	< 0.0023	4.0	4.0
M55-UBF	10/23/2019	Primary	0.000028 J	0.0016	--	0.0016	0.002	0.0026	0.080	--	0.080	--	0.0017 J	0.04	--	0.04	0.05	0.000054 J	0.0016	--	0.0016	0.002	0.0050	--	0.0098	< 0.0023	4.0	4.0
M56-LBF	10/21/2019	Primary	0.000098 J	0.0016	--	0.0016	0.002	0.0041	0.080	--	0.080	--	0.0016 J	0.04	--	0.04	0.05	0.000038 J	0.0016	--	0.0016	0.002	0.0066	--	0.0148	0.0023 J	4.0	4.0
M57-O	10/10/2019	Primary	0.00014 J	0.0016	--	0.0016	0.002	0.0028	0.080	--	0.080	--	0.0019 J	0.04	--	0.04	0.05	0.000054 J	0.0016	--	0.0016	0.002	0.013	--	0.0135	< 0.0023	4.0	4.0
M57-O	10/10/2019	Duplicate	0.000099 J	0.0016	--	0.0016	0.002	0.0025	0.080	--	0.080	--	0.0019 J	0.04	--	0.04	0.05	0.000044 J	0.0016	--	0.0016	0.002	0.011	--	0.0135	< 0.0023	4.0	4.0
M58-O	10/22/2019	Primary	0.000020 J	0.0016	--	0.0016	0.002	0.0071	0.080	--	0.080	--	0.0021 J	0.04	--	0.04	0.05	0.000036 J	0.0016	--	0.0016	0.002	0.0058	--	0.1341	< 0.0023	4.0	4.0
M59-O	10/21/2019	Primary	0.00010 J	0.0016	--	0.0016	0.002	0.0023	0.080	--	0.080	--	0.0030	0.04	--	0.04	0.05	0.000039 J	0.0016	--	0.0016	0.002	0.0048	0.16	0.0052	0.0063 J	4.0	4.0
M59-O	10/21/2019	Duplicate	0.000096 J	0.0016	--	0.0016	0.002	0.0020	0.080	--	0.080	--	0.0026	0.04	--	0.04	0.05	0.000040 J	0.0016	--	0.0016	0.002	0.0035	0.16	0.0052	0.0059 J	4.0	4.0
M60-O	11/13/2019	Primary	< 0.0000041	0.0016	--	0.0016	0.002	0.0089	0.20	--	0.2	--	0.0022 J	0.04	--	0.04	0.05	0.000064 J	0.0016	--	0.0016	0.002	0.046	0.16	0.0612	< 0.0023	4.0	4.0
M61-LBF	10/23/2019	Primary	0.000014 J	0.0016	--	0.0016	0.002	0.0059	0.080	--	0.080	--	0.0012 J	0.04	--	0.04	0.05	0.000091 J	0.0016	--	0.0016	0.002	0.0013	0.16	0.0041	< 0.0023	4.0	4.0
MW-01-LBF	10/21/2019	Primary	0.000094 J	0.0016	--	0.0016	0.002	0.010	0.080	--	0.080	--	0.0016 J	0.04	--	0.04	0.05	0.000053 J	0.0016	--	0.0016	0.002	0.011	0.16	0.0154	0.0067 J	5.6	4.6
MW-01-O	10/10/2019	Primary	0.00012 J	0.0016	--	0.0016	0.002	0.0074	0.080	--	0.080	--	0.0020 J	0.04	--	0.04	0.05	0.000062 J	0.0016	--	0.0016	0.002	0.012	0.16	0.033	0.0025 J	4.0	4.0
Arizona Aquifer Water Quality Standard ⁽¹⁾			0.002				0.1				0.05				0.02				0.002				--			--		

Notes:

Detects are **bolded**.

Non-detects are reported to the laboratory method detection limit (< MDL).

AL = Alert level

mg/L = milligrams per liter

AQL = Aquifer Quality Limit

Temp APP = Temporary Aquifer Protection

Permit No. 106360

UIC = Underground Injection Control Permit

No. R9UIC-AZ3-FY11-1

(1) Arizona Aquifer Water Quality Standard (AWQS), Drinking Water Standard, Dec 31, 2016.

APPENDIX A

Data Quality Assurance/Quality Control Summary Memorandum



HALEY & ALDRICH, INC.
One Arizona Center
400 E. Van Buren St., Suite 545
Phoenix, AZ 85004
602.760.2450

MEMORANDUM

17 January 2020
File No. 133887-002

TO: Haley & Aldrich, Inc.
Sarah Cooper, P.E.

FROM: Haley & Aldrich, Inc.
Vanessa Goddard
Data Manager

SUBJECT: Appendix A – Data Quality Assurance/Quality Control Summary

Analytical results for environmental samples collected during the fourth quarter (Q4) 2019 compliance monitoring event were verified in accordance with guidance provided by the U.S. Environmental Protection Agency [USEPA], 2012]¹. For each laboratory data package, the following quality control/quality assurance (QA/QC) criteria from the analysis of the project samples were reviewed:

- Completeness with the chain of custody (COC);
- Comparison of reporting limits to alert levels (AL) and aquifer quality limits (AQL);
- Holding times/preservation;
- Blank sample analysis;
- Surrogate recovery compliance;
- Laboratory control samples;
- Matrix spike samples;
- Laboratory and field duplicate sample analysis; and
- Verification of laboratory report data.

Sample data was qualified by the laboratory in accordance with laboratory standard operating procedures (SOP). Based on a check of the data qualifiers assigned to the project sample results, these flags were applied to the reported results in accordance with the laboratory specific SOP.

¹ USEPA, 2012. EPA Region 9 Guidance for Quality Assurance Program Plans, R9QA/03.2. March 2012.

COMPLETENESS WITH CHAIN OF CUSTODY

Samples were collected, preserved, and shipped following standard COC protocol. Samples were also received appropriately, identified correctly, and analyzed according to the COC. COCs were appropriately signed and dated by the field and/or laboratory personnel. The following exceptions were noted:

- Custody seals were not used on the sample cooler(s) because a laboratory courier picked up the samples.
- The COC for sample ID M57-O-120919 lists a trip blank but these vials were not received by the laboratory nor were they required given the methods requested on the COC.

REPORTING LIMITS

The reporting limits and/or method detection limits were at or below the applicable ALs and AQLs.

HOLDING TIMES/PRESERVATION

The samples arrived at the laboratory at the proper temperature and were prepared and analyzed within the holding time and preservation criteria specified as per each method's protocol with the following exceptions:

Laboratory Report	Method	Matrix	Holding Time	Preservation	Sample ID, Violation, Qualification
19J0381	USEPA 150.1	Water	15 minutes (Field method)	Cool to $\leq 6^{\circ}\text{C}$	Samples M57-O-101019 and M75.O-101019 were analyzed outside the holding time by the laboratory per client request.
19J0382	USEPA 150.1	Water	15 minutes (Field method)	Cool to $\leq 6^{\circ}\text{C}$	Sample MW-01-O-101019 was analyzed outside the holding time by the laboratory per client request.
19J0476	USEPA 150.1	Water	15 minutes (Field method)	Cool to $\leq 6^{\circ}\text{C}$	The following samples were analyzed outside the holding time by the laboratory per client request: M22-O-101619; M23-UBF-101619; M15-GU-101619; and M14-GL-101619.
19J0476	USEPA 2540C	Water	7 days	Cool to $\leq 6^{\circ}\text{C}$	TDS for sample M15-GU-101619 was confirmed out of hold, 15 days following sample collection. Both initial and confirmation results were reported.

Laboratory Report	Method	Matrix	Holding Time	Preservation	Sample ID, Violation, Qualification
19J0555	USEPA 150.1	Water	15 minutes (Field method)	Cool to ≤ 6 °C	The following samples were analyzed outside the holding time by the laboratory per client request: M52-UBF-102119; M56-LBF-102119; MW-01-LBF-102119; M59-O-102119; M84.O-102119; and M54-LBF-102119.
19J0586	USEPA 150.1	Water	15 minutes (Field method)	Cool to ≤ 6 °C	The following samples were analyzed outside the holding time by the laboratory per client request: M54-O-102219; and M58-O-102219.
19J0632	USEPA 2540C	Water	7 days	Cool to ≤ 6 °C	TDS for sample M55-UBF-102319 was confirmed out of hold, 13 days following sample collection. Both initial and confirmation results were reported.
19J0632	USEPA 150.1	Water	15 minutes (Field method)	Cool to ≤ 6 °C	The following samples were analyzed outside the holding time by the laboratory per client request: M55-UBF-102319; and M61-LBF-102319.
19K0388	USEPA 150.1	Water	15 minutes (Field method)	Cool to ≤ 6 °C	Sample M59-O-111319 was analyzed outside the holding time by the laboratory per client
19K0389	USEPA 300.0	Water	48 hours	Cool to ≤ 6 °C	Nitrite (as N) for sample M60-O-111319 was confirmed out of hold, 7 days following sample collection. Initial result was within holding time.
19K0389	USEPA 150.1	Water	15 minutes (Field method)	Cool to ≤ 6 °C	Sample M60-O-111319 was analyzed outside the holding time by the laboratory per client request.
19K0389	USEPA 8015D	Water	7 days unpreserved; 14 days preserved	Cool to ≤ 6 °C; pH < 2 with HCl; No Headspace	Sample M60-O-111319 was received by the subcontracted laboratory above temperature at 15.7 °C.
19L0541	USEPA 150.1	Water	15 minutes (Field method)	Cool to ≤ 6 °C	Sample M60-O-121719 was analyzed outside the holding time by the laboratory per client request.
Notes:					
°C = degrees Celsius					
mg/L = milligrams per liter					
TDS = total dissolved solids					
USEPA = U.S. Environmental Protection Agency					

BLANK SAMPLE ANALYSIS

Field blanks are prepared to identify contamination that may have been introduced during field activity. Trip blanks are prepared when volatile analysis is requested to identify contamination that may have been introduced during transport. The analysis of the blank samples for field quality control was free of target compounds.

Method blank samples had no detections, indicating that no contamination from laboratory activities occurred with the following exceptions:

Laboratory Report	Sample ID	Batch ID	Analyte Detected in Method Blank	Concentration (mg/L)
19J0381	M57-O-101019, M75.O-101019	1910169	Nickel, Dissolved	0.000038 J
19J0381		1910289	Mercury, Dissolved	0.000094 J
19J0382	MW-01-O-101019	1910169	Nickel, Dissolved	0.000038 J
19J0382		1910289	Mercury, Dissolved	0.000094 J
19J0476	M22-O-101619, M23-UBF-101619, M15-GU-101619, M14-GL-101619	1910213	Iron, Dissolved	0.0073 J
		1910246	Barium, Dissolved	0.000031 J
		1910246	Beryllium, Dissolved	0.000025 J
		1910246	Chromium, Dissolved	0.000035 J
		1910246	Cobalt, Dissolved	0.000021 J
		1910246	Nickel, Dissolved	0.000020 J
		1910289	Mercury, Dissolved	0.000094 J
19J0555	M52-UBF-102119, M56-LBF-102119, MW-01-LBF-102119, M59-O-102119, M84.O-102119, M54-LBF-102119	1910286	Antimony, Dissolved	0.00019 J
		1910286	Barium, Dissolved	0.000073 J
		1910286	Beryllium, Dissolved	0.000037 J
		1910286	Chromium, Dissolved	0.000073 J
		1910286	Cobalt, Dissolved	0.000041 J
		1910286	Manganese, Dissolved	0.000040 J
		1910286	Nickel, Dissolved	0.000019 J
		1910286	Thallium, Dissolved	0.000046 J
		1910289	Mercury, Dissolved	0.000094 J
19J0586	M54-O-102219, M58-O-102219	1910286	Antimony, Dissolved	0.00019 J
		1910286	Barium, Dissolved	0.000073 J
		1910286	Beryllium, Dissolved	0.000037 J
		1910286	Chromium, Dissolved	0.000073 J
		1910286	Cobalt, Dissolved	0.000041 J

Laboratory Report	Sample ID	Batch ID	Analyte Detected in Method Blank	Concentration (mg/L)
		1910286	Manganese, Dissolved	0.000040 J
		1910286	Nickel, Dissolved	0.000019 J
		1910286	Thallium, Dissolved	0.000046 J
		1910289	Mercury, Dissolved	0.000013 J
		1910402	Alkalinity, Bicarbonate	1.0 J
		1910402	Alkalinity, Total	1.0 J
19J0632	M55-UBF-102319, M61-LBF-102319	1910319	Total Uranium	0.000040 J
		1910344	Chromium, Dissolved	0.000030 J
		1910344	Nickel, Dissolved	0.00023 J
		191130	Mercury, Dissolved	0.000013 J
		1911093	Iron, Dissolved	0.015 J
		1911093	Sodium	0.88 J
		1911036	Alkalinity, Bicarbonate	1.5 J
19K0389	M60-O-111319	1910410	Cadmium, Dissolved	0.000073 J
19K0389	M60-O-111319	1910410	Chromium, Dissolved	0.000071 J
Notes: J = estimated mg/L = milligrams per liter				

SURROGATE RECOVERY COMPLIANCE

The percent recovery (%R) for each surrogate compound added to each project samples was determined to be within the laboratory specified quality control limits.

LABORATORY CONTROL AND MATRIX SPIKE SAMPLES

Compounds associated with the laboratory control sample and laboratory control sample duplicate (LCS/LCSD) and matrix spike and matrix spike duplicate (MS/MSD) analyses exhibited recoveries and relative percent differences (RPDs) within the specified limits with the following exceptions:

Laboratory Report	Sample ID	Sample Type	Method	Batch ID/Parent Sample ID	Analyte	%R, RPD	Acceptable %R, RPD
19J0381	M57-O-101019, M75.O-101019	LCS/LCSD	USEPA 300.0	1910159	Fluoride	114%/116%	90-110%
19J0381	M57-O-101019	MS/MSD	USEPA 300.0	M57-O	Chloride	78%/76%	90-110%

Laboratory Report	Sample ID	Sample Type	Method	Batch ID/Parent Sample ID	Analyte	%R, RPD	Acceptable %R, RPD
19J0382	MW-01-O-101019	LCS/LCSD	USEPA 300.0	1910159	Fluoride	114%/116%	90-110%
19J0476	M22-O-101619, M23-UBF-101619, M15-GU-101619, M14-GL-101619	LCS	USEPA 8260B	1910284	1,1-Dichloroethene	130%	70-130%
19K0389	M60-O-111319	MS	USEPA 200.7	M60-O	Calcium	14%	70-130%
19K0389	M60-O-111319	MS	USEPA 200.7	M60-O	Sodium	NR	70-130%
19K0389	M60-O-111319	LCS	USEPA 8015D	196657	TPH-Diesel	148%/102% RPD=37	52-150%, RPD = 22
19J0555	M52-UBF-102119	MS	USEPA 200.7	M52-UBF	Calcium	68%	70-130%
19J0555	M52-UBF-102119	MS	USEPA 200.7	M52-UBF	Sodium	55%	70-130%

Notes:*% = percent**%R = percent recovery**LCS = laboratory control sample**LCSD = laboratory control sample duplicate**MS = matrix spike**MSD = matrix spike duplicate**RPD = relative percent difference**TPH = total petroleum hydrocarbons**USEPA = U.S. Environmental Protection Agency***LABORATORY AND FIELD DUPLICATE SAMPLES**

The RPDs for laboratory duplicate analysis were all below 20 percent for water (or the absolute difference rule was satisfied if detects were less than 5 times the reporting limit [RL]), with the following exceptions:

Lab Sample Number	Laboratory Duplicate Sample Client ID	Method(s)	RPD
19J0476-03	M15-GU-101619 (Initial)	USEPA 2540C (Total Dissolved Solids [TDS])	61%
Notes:			
<i>% = percent</i>			
<i>RPD = relative percent difference</i>			
<i>USEPA = U.S. Environmental Protection Agency</i>			

The RPDs for field duplicate analysis were all below 35 percent for water (or the absolute difference rule was satisfied if detects were less than 5 times the RL), with the following exceptions:

Analyte (mg/L)	Primary Sample ID	Duplicate Sample ID	% RPD	Note
	M57-O-101019	M75.0-101019		
Chromium, dissolved	0.0022	0.0016	NA	Absolute difference is greater than the reporting limit of 0.00050 mg/L

Notes:
mg/L = milligrams per liter
NA = not applicable
RPD = relative percent difference

VERIFICATION OF LABORATORY REPORT DATA

A minimum of 10 percent of the data reported by the laboratory was verified against the electronic data deliverables.

\\\haleyaldrich.com\share\phx_common\Projects\Florence Copper\133887 Quarterly Monitoring\Deliverables\4Q 2019 Reports\4Q 2019 Temp APP Report\Attachments\APP 10 UIC 6 Quarterly Compliance Monitoring Report\Appendix A QA_QC Summary Q42019.docx

ATTACHMENT 7

Results of Monthly Lixiviant Organic Analysis

TABLE 1**MONTHLY LIXIVIANT (RAFFINATE) MONITORING RESULTS**

FLORENCE COPPER INC.

FLORENCE, ARIZONA

Analyte	Units	Sample Date		
		10/16/2019	11/13/2019	12/11/2019
Benzene	mg/L	<0.0005	<0.0005	<0.0005
Ethylbenzene	mg/L	<0.0005	<0.0005	<0.0005
Naphthalene	mg/L	<0.002	<0.002	<0.002
n-Octane	mg/L	<0.0005	<0.0005	<0.0005
Toluene	mg/L	<0.0005	<0.0005	<0.0005
Xylenes, Total	mg/L	<0.0015	<0.0015	<0.0015
TPH - Diesel	mg/L	1.2 ¹	<0.96	0.96
Total Organics	mg/L	1.2	<0.96	0.96
Maximum Allowable				
Average Total Organics	mg/L	10	10	10

Notes¹ TPH-Diesel sample collected on 10/22/2019

mg/L = milligrams per liter

TPH = total petroleum hydrocarbons

ATTACHMENT 8

Results of Mechanical Integrity Testing

MECHANICAL INTEGRITY TESTING

FLORENCE COPPER INC.

FLORENCE, ARIZONA

Mechanical Integrity Tests			
Well ID	Temperature Log Date	Pressure Test Date	Pass (P) Fail (F)
I-01	12/5/2019	12/10/2019	P
I-02	12/11/2019	12/13/2019	P
I-03	12/18/2019	12/19/2019	P
I-04	12/14/2019	12/15/2019	P

ATTACHMENT 9

Results of Annular Conductivity Device Monitoring



ANNUAL CONDUCTIVITY DATA QA PROCEDURE & DOCUMENTATION FORM (V.1)

GENERAL

HGI Project Name: 2018-030 – FCP Bulk & Annular Conductivity Monitoring	Project Site: Florence Copper Project	Weather Conditions: Sunny 94F CLEAR	
Date 10/3/2019	Field Operator Name: Chris Baldyga	Start and End Time: 1158 1401 1333	
EQUIPMENT		DIAGNOSTICS (See back of sheet for detailed instructions and procedures)	
AGI MiniSting (MS) Serial #: S0608049 HGI Cray Interface Panel SN# CR-ES-002		6Ω Resistor Standard Result: <u>6.365</u> Pass Criteria: $6.25\Omega \pm 0.30$ Circle One: <u>Pass or Fail</u>	<ul style="list-style-type: none"> • No. Cycles: 4 • Max Error: Off • Max Current: -50mA 20mA • Measure Time: 3.6 • Measure mode: RESISTANCE

DATA COLLECTION:

WELL ID	Time (24h)	Current (I mA)	1			2			3			Data Acceptance	
			Reading	Resistance ($\Delta Y = \Omega$)	Error ($\sigma = \%$)	Reading	Resistance ($\Delta Y = \Omega$)	Error ($\sigma = \%$)	Reading	Resistance ($\Delta Y = \Omega$)	Error ($\sigma = \%$)		
1	WB-04	1221	20	238	62.17	1.6	239	62.34	2.2	240	62.31	2.2	(P/F)
2	WB-03	1226	20	241	76.17	1.1	242	76.33	1.7	243	76.40	1.9	(P/F)
3	WB-02	1230	20	244	77.91	2.8	245	78.75	2.4	246	78.40	2.3	(P/F)
4	WB-01	1235	20	247	47.76	2.0	248	47.53	2.5	249	47.43	2.5	(P/F)
5	B-01	1247	20	258	63.11	0.6	251	62.55	0.9	252	62.39	0.9	(P/F)
6	B-07	1254	20	253	54.68	0.5	254	53.93	0.8	255	53.66	0.9	(P/F)
7	B-06	1303	20	256	58.68	1.2	257	57.17	0.6	258	56.64	0.7	(P/F)
8	B-05	1314	20	259	84.72	0.6	260	83.60	0.9	261	83.31	0.9	(P/F)
9	B-04	1321	20	262	57.72	0.8	263	56.48	0.9	264	56.07	1.2	(P/F)
10	B-03	1327	20	265	50.04	0.7	266	49.13	0.6	267	48.62	0.6	(P/F)
11	B-02	1333	20	268	62.58	3.6	269	62.63	3.4	270	62.41	3.4	(P/F)
12													(P/F)
13													(P/F)
14													(P/F)
15													(P/F)

DATA QUALITY ACCEPTANCE

Measurement Error Evaluation

Pass Criteria: 66% (2/3) of measurement error values less than 5%

FIELD OBSERVATIONS

(Briefly describe site activities at time of data acquisition, status of electrode arrays, or other parameters that may influence readings)

TEHS COLLECTING SAMPLES FROM WELLS GENERATOR RUNNING

By signing, I certify that data collection instrumentation pass all required tests and the data collection process follows all required setup and programming instructions listed within this procedure.

 10/4/10
Field Operator Signature/Date

By signing, I certify that measured data pass all required data quality tests listed within this procedure.

 10/4/10
Data Inspector Signature/Date

ATTACHMENT 10

Table of Monthly Casing Annulus and Injection Pressures

4Q 2019 DAILY WELLHEAD PRESSURES - INJECTION WELLS

Page 1 of 3

FLORENCE COPPER INC.

FLORENCE, ARIZONA

Table 1. October 2019 Daily Wellhead Pressures - Injection Wells

Date	I-01			I-02			I-03			I-04			Fracture Gradient
	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	
10/1/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/2/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/3/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/4/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/5/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/6/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/7/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/8/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/9/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/10/2019	0.00	0.00	0.00	1.84	0.00	3.66	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/11/2019	0.00	0.00	0.00	0.70	0.00	3.78	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/12/2019	0.00	0.00	0.00	0.02	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/13/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/14/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/15/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/16/2019	0.00	0.00	0.00	0.01	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/17/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/18/2019	0.00	0.00	0.03	4.13	0.00	58.70	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/19/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/20/2019	0.00	0.00	0.00	0.13	0.00	38.67	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/21/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/22/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/23/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/24/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/25/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/26/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/27/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/28/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/29/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/30/2019	0.00	0.00	0.03	0.77	0.00	56.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/31/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90

All measurements in pounds per square inch (psi)

NM = Not measured or otherwise not available

Calculation of Pressure Allowed at the Wellhead from the Allowed Fracture Gradient

P-Wellhead = P-TOS - P-Col = [P-Frac x D-TOS] - [D-TOS / Conv] Where:

P-Fracture	= Pressure allowed at the top of the injection well screen (TOS)	=	0.65	psi/foot of depth
D-TOS	= Depth to top of injection well screens	=	520	feet
P-TOS	= Total pressure allowed at top of screen = P-Fracture x D-TOS	= 0.65 psi/foot x 520 feet	338	psi
Conv	= Feet of Water per psi	=	2.31	feet/psi
P-Col	= Pressure from weight of water column at TOS	= 520 feet / 2.31 feet/psi	225.11	psi
P-Wellhead	= Allowable pressure at the top of the wellhead = P-TOS - P-Col	= 338 psi - 255.1 psi	112.89	psi

4Q 2019 DAILY WELLHEAD PRESSURES - INJECTION WELLS

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FLORENCE COPPER INC.

FLORENCE, ARIZONA

Table 2. November 2019 Daily Wellhead Pressures - Injection Wells

Date	I-01			I-02			I-03			I-04			Fracture Gradient
	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	
11/1/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/2/2019	0.00	0.00	0.03	0.00	0.00	0.07				0.00	0.00	0.03	112.90
11/3/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/4/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/5/2019	0.00	0.00	0.05	0.04	0.00	10.12				0.00	0.00	0.00	112.90
11/6/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/7/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/8/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/9/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/10/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/11/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/12/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/13/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/14/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/15/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/16/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/17/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/18/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/19/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/20/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/21/2019	0.00	0.00	0.03	0.00	0.00	0.08				0.00	0.00	0.00	112.90
11/22/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/23/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/24/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/25/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/26/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/27/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/28/2019	0.00	0.00	0.03	0.00	0.00	0.08				0.00	0.01	0.00	112.90
11/29/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/30/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90

All measurements in pounds per square inch (psi)
NM = Not measured or otherwise not available
11/1/2019 - 11/14/2019: I-03 operating as a recovery well
Calculation of Pressure Allowed at the Wellhead from the Allowed Fracture Gradient
P-Wellhead = P-TOS - P-Col = [P-Frac x D-TOS] - [D-TOS / Conv] Where:

P-Fracture	= Pressure allowed at the top of the injection well screen (TOS)	=	0.65	psi/foot of depth
D-TOS	= Depth to top of injection well screens	=	520	feet
P-TOS	= Total pressure allowed at top of screen = P-Fracture x D-TOS	= 0.65 psi/foot x 520 feet	338	psi
Conv	= Feet of Water per psi	=	2.31	feet/psi
P-Col	= Pressure from weight of water column at TOS	= 520 feet / 2.31 feet/psi	225.11	psi
P-Wellhead	= Allowable pressure at the top of the wellhead = P-TOS - P-Col	= 338 psi - 255.1 psi	112.89	psi

4Q 2019 DAILY WELLHEAD PRESSURES - INJECTION WELLS

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FLORENCE COPPER INC.

FLORENCE, ARIZONA

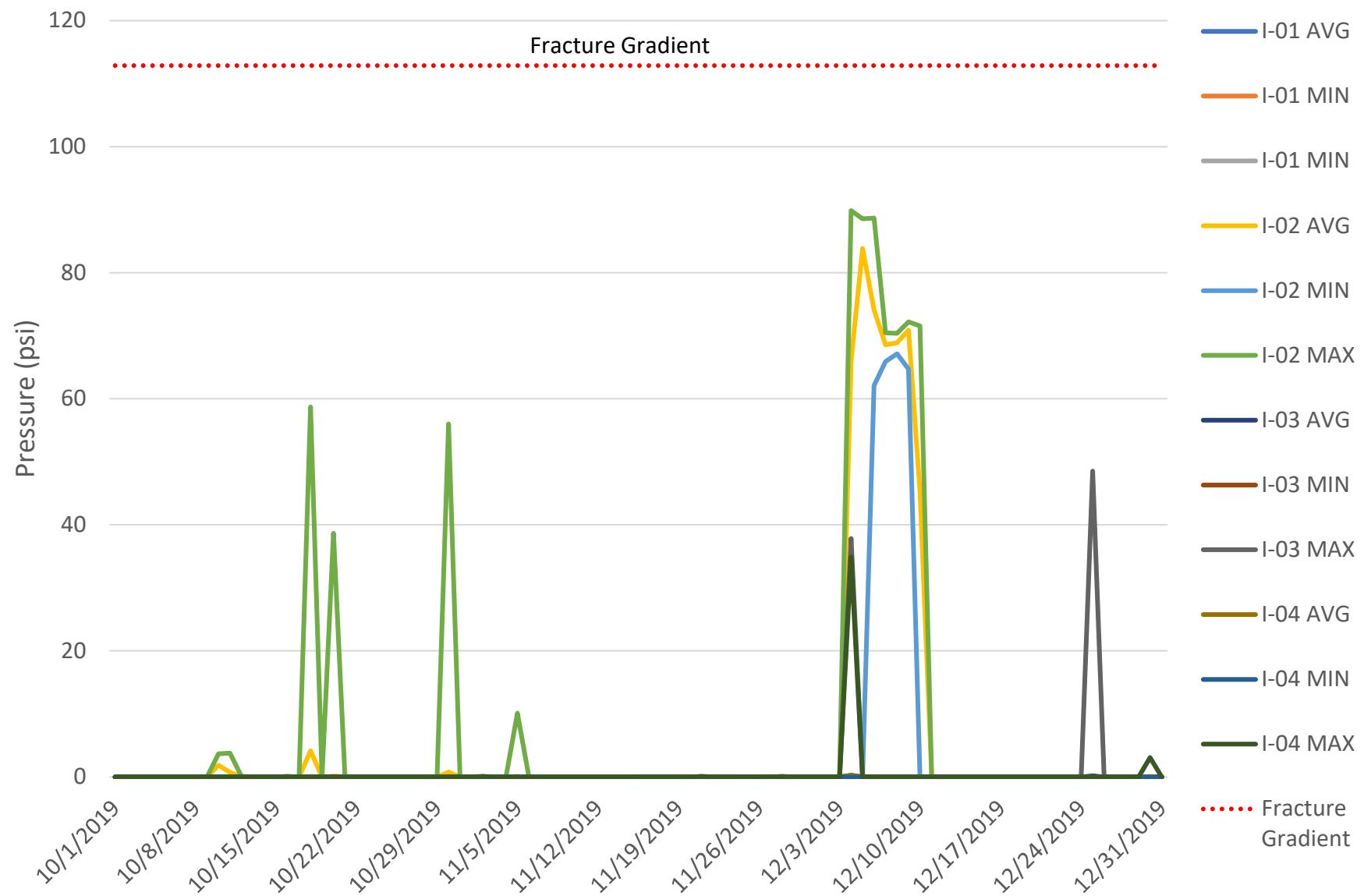
Table 3. December 2019 Daily Wellhead Pressures - Injection Wells

Date	I-01			I-02			I-03			I-04			Fracture Gradient
	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	
12/1/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/2/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/3/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/4/2019	0.00	0.00	0.00	66.05	0.00	89.88	0.25	0.00	37.84	0.26	0.00	34.92	112.90
12/5/2019	0.00	0.00	0.00	83.84	0.08	88.55	0.00	0.00	0.00	0.00	0.00	0.01	112.90
12/6/2019	0.00	0.00	0.00	74.09	62.09	88.67	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/7/2019	0.00	0.00	0.00	68.54	65.89	70.44	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/8/2019	0.00	0.00	0.00	68.87	67.13	70.36	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/9/2019	0.00	0.00	0.00	70.88	64.73	72.18	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/10/2019	0.00	0.00	0.00	45.31	0.00	71.57	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/11/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/12/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/13/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/14/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/15/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/16/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/17/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/18/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/19/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/20/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/21/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/22/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/23/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/24/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/25/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	48.55	0.00	0.00	0.00	112.90
12/26/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/27/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/28/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/29/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/30/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	3.04	112.90
12/31/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90

All measurements in pounds per square inch (psi)
NM = Not measured or otherwise not available
Injection Well MIT, Video, and Temperature Logging: December 4 - 20, 2019. (During this time flows were adjusted and pressure fluctuations were expected.)
I-01: 12/4/2019 - 12/5/2019 and 12/10/2019;
I-02: 12/11/2019 - 12/13/2019;
I-03: 12/17/2019 - 12/20/2019; (ADEQ on-site for observation 12/19/2019)
I-04: 12/13/19 - 12/17/2019.
Calculation of Pressure Allowed at the Wellhead from the Allowed Fracture Gradient
P-Wellhead = P-TOS - P-Col = [P-Frac x D-TOS] - [D-TOS / Conv] Where:

P-Fracture	= Pressure allowed at the top of the injection well screen (TOS)	=	0.65	psi/foot of depth
D-TOS	= Depth to top of injection well screens	=	520	feet
P-TOS	= Total pressure allowed at top of screen = P-Fracture x D-TOS	= 0.65 psi/foot x 520 feet	338	psi
Conv	= Feet of Water per psi	=	2.31	feet/psi
P-Col	= Pressure from weight of water column at TOS	= 520 feet / 2.31 feet/psi	225.11	psi
P-Wellhead	= Allowable pressure at the top of the wellhead = P-TOS - P-Col	= 338 psi - 255.1 psi	112.89	psi

Figure 1. Q4 2019 Daily Wellhead Pressures - Injection Wells



4Q DAILY CASING ANNULUS PRESSURES - INJECTION WELLS

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FLORENCE COPPER INC.

FLORENCE, ARIZONA

Table 4. October 2019 Daily Casing Annulus Pressures - Injection Wells

Date	I-01			I-02			I-03			I-04			Fracture Gradient
	Avg	Min	Max										
10/1/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/2/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/3/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/4/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/5/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/6/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/7/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/8/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/9/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/10/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/11/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/12/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/13/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/14/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/15/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/16/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/17/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/18/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/19/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/20/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/21/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/22/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/23/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/24/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/25/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/26/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/27/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/28/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/29/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/30/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
10/31/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90

All measurements in pounds per square inch (psi)

There were no casing annulus pressures >0 during the fourth quarter of 2019

4Q DAILY CASING ANNULUS PRESSURES - INJECTION WELLS

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FLORENCE COPPER INC.

FLORENCE, ARIZONA

Table 5. November 2019 Daily Casing Annulus Pressures - Injection Wells

Date	I-01			I-02			I-03			I-04			Fracture Gradient
	Avg	Min	Max										
11/1/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/2/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/3/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/4/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/5/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/6/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/7/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/8/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/9/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/10/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/11/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/12/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/13/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/14/2019	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	112.90
11/15/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
11/16/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
11/17/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
11/18/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
11/19/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
11/20/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
11/21/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
11/22/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
11/23/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
11/24/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
11/25/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
11/26/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
11/27/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
11/28/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
11/29/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
11/30/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90

All measurements in pounds per square inch (psi)

There were no casing annulus pressures >0 during the fourth quarter of 2019

Injection well I-03 was operated as a recovery well from 11/01/2019 - 11/14/2019.

4Q DAILY CASING ANNULUS PRESSURES - INJECTION WELLS

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FLORENCE COPPER INC.

FLORENCE, ARIZONA

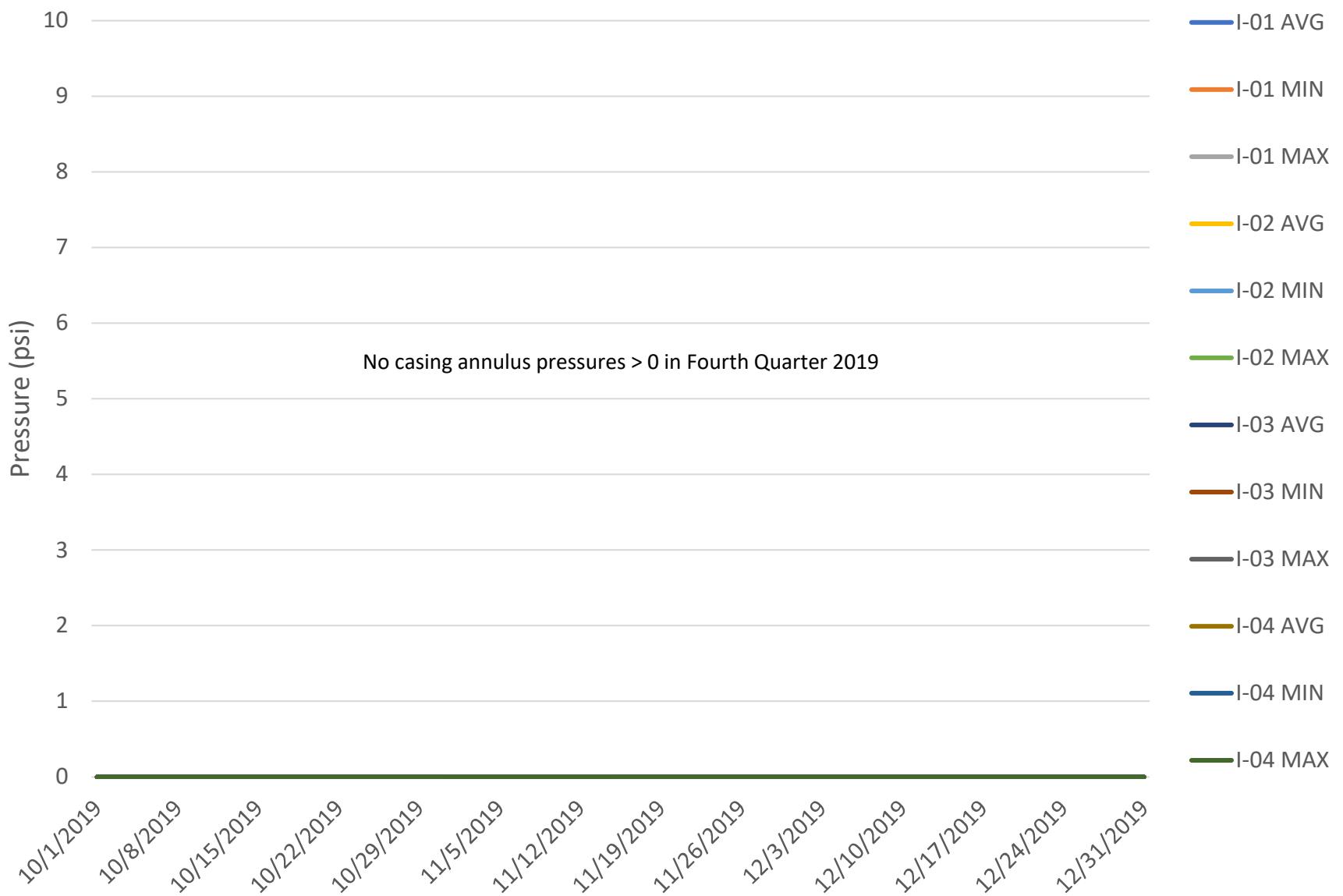
Table 6. December 2019 Daily Casing Annulus Pressures - Injection Wells

Date	I-01			I-02			I-03			I-04			Fracture Gradient
	Avg	Min	Max										
12/1/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/2/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/3/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/4/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/5/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/6/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/7/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/8/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/9/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/10/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/11/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/12/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/13/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/14/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/15/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/16/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/17/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/18/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/19/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/20/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/21/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/22/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/23/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/24/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/25/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/26/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/27/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/28/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/29/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/30/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90
12/31/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.90

All measurements in pounds per square inch (psi)

There were no casing annulus pressures >0 during the fourth quarter of 2019

Figure 2. Q4 2019 Daily Casing Annulus Pressures - Injection Wells



ATTACHMENT 11

Migratory Bird Landings

TABLE 1
Q4 2019 OBSERVED MIGRATORY BIRD LANDINGS
FLORENCE COPPER INC.
FLORENCE, ARIZONA

Date	Time	Migratory Bird Species	Comments:	Fatality (Y or N)
10/31/2019	6:00 PM	30 Ducks	Flew off within 1 hour	N
11/12/2019	3:00 PM	1 Large White Goose	Flew off within 1 hour	N
12/9/2019	2:30 PM	1 Duck	Brief landing, then flew off	N

Notes:

No migratory bird mortalities were observed in Q4 2019.